

Table with exchange rates for various countries including Australia, Canada, France, Germany, etc.



A CROWNING ACHIEVEMENT — Jim Courier hoisting the winner's trophy after dispensing with Goren Ivanisevic on Sunday in the Italian Open tennis tournament. "I don't know who was out there," said Ivanisevic after losing, 6-1, 6-2, 6-2. "It wasn't me."

### Asian Worry on Europe: Will Doors Be Closed?

By Michael Richardson  
International Herald Tribune  
JAKARTA — Asia-Pacific nations fear that rising political, ethnic and religious tensions in Europe will force the European Community to become more inward-looking and strengthen protectionism.

Officials and specialists in East Asia are concerned that their region's growing economic power and exports at a time of recession, high unemployment and self-doubt in Europe will make it a prime target for exclusionary policies. Japan and, to a lesser extent, China, have been strongly criticized by the European Community in recent months over their rising trade surpluses.

Jean-Pierre Leng, ambassador of the EC Commission to Tokyo, warned that the Japanese surplus, which reached \$31 billion in 1992, was a "time bomb" that could derail relations with Europe unless it was defused.

Some Asian officials assert that Europe's view of Asia as an economic challenge is particularly prone to exclusionary policies because it is tinged with racism.

Prime Minister Mahathir bin Mohamad of Malaysia said European "uneasiness seems to suggest that Asia today is a more serious threat than even militaristic Japan in the first half of the century."

Running through this perception, he said, "is a current of distrust and fear because East Asia is peopled not by Europeans but by non-Europeans."

H. Abdurrahman Wahid, chairman of the national executive committee of Nahdlatul Ulama, the largest Muslim organization in Indonesia, said that Europe "must be careful not to degenerate into traditional rivalries" between national, ethnic and religious groups.

He said that European reluctance to punish Christian Serbs for "ethnic cleansing" against Bosnian Muslims was "a clear case of double standards." Europe, he noted, had joined the United States in punishing Iraq for invading Kuwait but had failed to act with resolution against the Serbs.

Asian officials see a welter of European problems — from rising unemployment and social dislocation to doubts about future plans for closer political and monetary union — that will reinforce demands to protect industries and jobs against outside competition, especially from East Asia.

Although East Asian economies have managed to maintain respectable export growth in the midst of recession in Europe by increasing sales to the United States and among themselves, the Community remains an important market.

In 1991, the nine largest East Asian economies minus Japan depended on the Community for from 13.3 percent of total exports, in the case of Indonesia, to 23.6 percent, for China.

However, Celina Lin, an analyst with Peregrine Brokerage Ltd. in Hong Kong, said the Community could afford to adopt a more protectionist stand, since only 18 percent of its exports and 17.4 percent of imports go to, or come from, countries other than the Western industrial democracies and Japan.

"Perhaps even more telling is that the European Community conducts almost two-thirds of its trade within Europe," she said.

In 1991, the nine East Asian countries accounted for 3.8 percent of EC exports, worth \$32.1 billion, and supplied 5.3 percent of its imports, valued at nearly \$77 billion.

### Peace Plan Now 'Dead,' Bosnian Serb Leader Says

'No' Vote Looks Huge; Muslim Forces Pounded By Croats and Serbs

SARAJEVO, Bosnia-Herzegovina — Bosnian Serb voters on Sunday appeared to be overwhelmingly rejecting a peace plan for the former Yugoslav republic, while Serbian and Croatian fighters pounded Muslim positions on two fronts.

The leader of the Bosnian Serbs, Radovan Karadzic, said the United Nations-backed peace plan was now "dead," and his army's commander threatened to bomb London and Washington if the West tried to intervene to force them to accept it.

"There is no hope for this plan because it is too far from reality," Mr. Karadzic said. "The

Russia supports the Vance-Owen peace plan regardless of the Bosnian vote. Page 4.

Vance-Owen plan number one is dead. Let's create a new Vance-Owen plan. He said a new plan should "accept the existence of the Serb republic."

Informal polling at numerous voting areas indicated nearly unanimous backing for a "no" to the Vance-Owen peace plan, which would divide the country into 10 semi-autonomous regions. And the Bosnian Serbs appeared set to give an overwhelming "yes" to the creation of an independent Serbian state in Bosnia.

General Ratko Mladic, the commander of Bosnian Serb forces, warned the West not to intervene with air strikes to try to force the plan on the Serbs.

"If they bomb me, I'll bomb London," General Mladic told Reuters. "There are Serbs in London, there are Serbs in Washington."

He said any Western troops that intervened on the ground would "leave their bones" in Bosnia.

With the plan apparently doomed, the Serbs and the Croats, who between them control most of Bosnia-Herzegovina, were poised to squeeze Muslim-led government forces and carve up most of Bosnia.

"We don't have a chance," said Kemal Murtic, an aide to Bosnia's Muslim president, Alija Izetbegovic, in Sarajevo. "They have decided to go to the end. They feel how weak we are."

Opposition to the peace plan pit forward by the European Community's mediator, Lord Owen, and the United Nations representative, Cyrus R. Vance, was virtually unanimous among Bosnian voters who spoke with reporters at the Serbian nationalist headquarters in Pale, 25 kilometers (15 miles) southeast of Sarajevo, the Bosnian capital.

When about 25 people lining up to vote in an abandoned furniture salesroom were asked as a group if they were for or against the peace plan, there were thumbs-down gestures and shouts of "Provi! Provi!" ("Against! Against!")

Reports from other areas under the control of the Serbs. Page 4.

### Even a 'Yes' in Denmark Won't End Splits in EC

By Tom Buerkle  
International Herald Tribune  
BRUSSELS — As Denmark's voters prepare to end a year of uncertainty and resolve their ambivalent feelings toward Europe in a referendum Tuesday, the broader questions of Europe's future integration and role in the world remain unresolved.

Polls indicate that Danish voters will reverse their narrow rejection of the Maastricht Treaty on European Union last June 2, now that Denmark has won exemptions from the treaty's provisions for a single currency, common foreign and defense policies and a common EC citizenship.

But even a solid "yes" vote will still leave deep cleavages within the European Community between countries like France and Germany, which want to accelerate the drive toward a centralized EC state with a single currency and common foreign and defense policies, and countries like Denmark and Britain, whose vision consists of a looser grouping of sovereign states.

The question is, said Etienne Davignon, a former EC commissioner and currently president of Soci t  Generale de Belgique, "are we

content with the single market, or do we believe that we can only have that if the commitments of the members in the Community go beyond?"

Whether the Danes vote "yes" or "no," he said, "the problem doesn't go away." But an affirmative vote will allow the debate over Europe's structure and policies to be played out, calmly over time within existing institutions, he added, rather than in an atmosphere of crisis in negotiations between national capitals.

Achieving a consensus on the Community's structure and goals is likely to become only more difficult as negotiations proceed to extend membership to Sweden, Norway, Finland and Austria in the next two to three years, and to prepare an opening for the countries of Eastern Europe sometime in the next decade.

Although the Community insists that those countries must accept all existing EC legislation to gain entry, Prime Minister Poul Nyrup Rasmussen of Denmark has said that he will support Norway's demand for special treatment for its fishing and offshore oil and gas industries.

Even if the Maastricht process stays on track. See DANES, Page 4.

### East German Steelworkers to Stay Out

By Brandon Mitchener  
International Herald Tribune

FRANKFURT — East German steelworkers seemed determined on Sunday to continue their strike for fast wage equality with the West even as the rest of Eastern Germany's metalworking industry moved toward ending its own two-week strike.

Negotiators for 20,000 steelworkers in Berlin and the surrounding East German state of Brandenburg broke off talks with industry officials, calling a settlement reached Friday in Dresden "a lousy compromise."

That compromise, which applied only to 170,000 metalworking industry employees in the state of Saxony but was considered a model for all of Eastern Germany, called for a delay in

matching West German pay levels until July 1996 instead of April 1994.

The IG Metall metalworkers' union and Gesamtmetall, the national metalworker employers' association, on Sunday approved the Dresden compromise and said they expected it to be accepted throughout Eastern Germany. The union called off strikes scheduled to begin Monday in Eastern Saxony, Berlin, Brandenburg and Thuringia and said talks toward regional compromises similar to the one reached in Saxony would resume soon.

Workers in Saxony, who were the first to strike on May 3, were expected to return to work on Wednesday.

In Berlin, however, IG Metall said it was not immediately willing to apply the Dresden com-

promise to metalworking and steel industry employees in the capital city and Brandenburg, where the cost of living is rising faster than elsewhere in East Germany.

"The steel strike will continue," said Horst Wagner, IG Metall's regional leader for Berlin. "The workers are outraged that no agreement has been reached," he told Reuters.

In Mecklenburg-Western Pomerania, meanwhile, IG Metall's negotiator, Frank Tischbiller, said the union was worried about the potential impact of a clause in the Saxony compromise that allows employers to pay wages below the industry average if a company's survival is at risk. Mecklenburg-Western Pomerania is poorer than Saxony and its industrial core is much weaker.

Kiosk  
US West Takes Stake in Time Cable  
US West Inc. will invest \$2.5 billion to buy 25 percent of Time Warner Inc.'s entertainment subsidiary, a landmark collaboration.  
General News  
Nuclear safeguards are lacking in former Soviet republics on Russia's rim. Page 2.  
'I'm late, I'm late' — Congressmen find Washington life is always in fast lane. Page 3.

How Citicorp Pulled Back From the Brink  
By Brett D. Fromson and Jerry Knight  
Washington Post Service  
On the Wednesday before Thanksgiving 1990, Citicorp's chief executive, John S. Reed, walked through the main doors of the Federal Reserve Bank of New York, on his way to a meeting that would mark the beginning of an effort to save the nation's largest bank from financial disaster.  
The Citicorp chief had been summoned by two of the most powerful regulators in the federal government: E. Gerald Corrigan, president of the New York Fed, and William Taylor, director of the Fed's division of bank supervision in Washington. In Mr. Corrigan's wood-paneled conference room on the 10th floor, the regulators got directly to the point. Sources familiar with the meeting recall the polite but blunt message this way:  
The U.S. banking system was headed for trouble and so was Citibank, Citicorp's main banking unit, the regulators warned. This, they said, was because of the sharp decline in the real estate market. With its vast deposits, Citibank had a unique responsibility, they said. A loss of public confidence could trigger a run on Citibank that would not only threaten the bank, but the entire financial system.  
Citibank must do whatever it took to restore its strength, Mr. Corrigan and Mr. Taylor stressed, even if that meant selling prized businesses, cutting dividends or watering down shareholders' investment by selling more stock.  
The meeting was a wake-up call for Mr. Reed, who until then had believed that Citibank could get through the real estate crunch without major damage. And it began an extraordinary two-and-a-half-year partnership between Mr. Reed and the regulators, largely working in secret, to rescue the nation's biggest bank and avoid worldwide financial turmoil.  
The rescue mission that began that day in November 1990 is now coming to an end, according to regulators and Citicorp officials alike. The huge bank, with its \$213 billion in

Hostage Taker in Paris: A Loner Who Went Mad  
Compiled by Our Staff From Dispatches  
PARIS — Jobless, divorced, solitary: The life of the man who took a Paris nursery school class hostage reflected some of the disappointments that contributed to the behavior of a dangerous paranoiac, experts said Sunday.  
Eric Schmitt was killed by three police bullets to the head on Saturday after holding six little girls and their teacher hostage for 46 hours in the Paris suburb of Neuilly-sur-Seine.  
French officials insisted that they had not entered the classroom with the intention of killing him. A judicial officer, Pierre Luyen-Caen, said the police opened fire only because Mr. Schmitt, who was wired to two kilograms of dynamite and held a detonator in his hands at all times, awoke from his slumber as the officers were removing the children.  
"He was in a paranoiac delirium," said Gilles Nakah, a psychiatrist who helped the authorities during the ordeal.  
The authorities said Mr. Schmitt, 42, appeared to have acted alone when he walked into the Commandant Charcot school on Thursday. Hooded and brandishing a pistol that turned out to be a blank gun, Mr. Schmitt took 21 children, ages 3 and 4, and their teacher, Laurence Dreyfus, 30, as hos-

ALL HANDS ON DECK — Chinese sailors helping fill up the stands on a rainy Sunday during the East Asia Games in Shanghai.  
By Sheryl WuDunn  
New York Times Service  
BEIJING — Inside his guarded compound, protected by armed policemen and by the pistol he carried, Wang Zhiqiang was about as close to a warlord as China has seen in recent years.  
Mr. Wang, 39, is said to have kidnapped and tortured his critics, and to have run a private courtroom and jail to punish those who tried to investigate him. He drove a police car with flashing lights and received a string of honors and titles.  
What is most striking about Mr. Wang, however, is that he did not become a warlord by being a military leader or a Communist Party official. Rather, he was a businessman who bought his way to the top.  
Mr. Wang has become an example of what can go wrong in a society that moves by leaps and bounds toward a market economy, a soci-



### The Chinese Businessman as Warlord

city where power and money take precedence over law. Mr. Wang, whose root was a rural county called Shengjin in Henan Province in central China, is now under arrest, but other local tycoons are thriving outside the law.

Shengjin County is closed to foreigners, and authorities rejected a reporter's request to visit. But central authorities are alarmed that local officials defied outside investigators, and some fear that the Shengjin affair represents decentralization gone berserk.

"Localities don't learn to compete," said a Chinese who recently visited Shengjin County to investigate the problems at Mr. Wang's factory. "They learn how to protect, and this prevents the market economy from developing fully. The government can't control it."

Mr. Wang, a former military official, built up the No. 1 Veterinarian Medicine Factory, which made medicines for both animals and

humans. In fact, the factory turned out "antibiotics" made of talcum powder or cornstarch and "intravenous solution" made from monosodium glutamate, or MSG, dissolved in tap water.

In December 1988, a veterinary hospital in another county discovered that medicines from Mr. Wang's factory were useless and refused to pay for them. That night, Mr. Wang sent two policemen to the home of the hospital accountant, Liang Dezhi.

The policemen, armed with guns, kicked open Mr. Liang's door at 5 A.M. and dragged him out of bed. They handcuffed him and hauled him to Mr. Wang's factory, where he was beaten and locked up.

Two low-level officials went to get Mr. Liang back, but Mr. Wang's policemen locked one up

See CHINA, Page 4

JAN 10 1993





# Russia Backs Peace Plan Regardless of Bosnia Vote

Compiled by Our Staff From Dispatches  
**MOSCOW** — Foreign Minister Andrei V. Kozirev said Sunday after talks with international mediators that the United Nations-European Community peace plan for the former Yugoslavia should be put into effect regardless of the outcome of a referendum in Bosnia.

"We don't have to wait until the last Bosnian fighter endorses" the plan, Mr. Kozirev said after talks with the EC mediator, Lord Owen, and Thorvald Stoltenberg in Moscow.

"We can put out the fire in former Yugoslavia step by step," he said. "All members of the international community agree on this."

Bosnian Serbs voted over the weekend in a referendum widely expected to reject the proposed peace plan dividing Bosnia into 10 cantons along ethnic lines.

Mr. Kozirev said Russia would contribute border monitors to help oversee the plan.

But he said the numbers and the composition of any additional force would have to be approved by the UN Security Council, which is expected to meet this week.

Lord Owen said it was unclear exactly how many monitors would be needed.

Russia has a small peacekeeping force in the former Yugoslavia.

Mr. Kozirev said Russia had no new plan for a peace settlement, but had suggestions to make on the carrying out of the UN-EC proposals. He gave no details.

Bosnian Serbs, through their self-proclaimed assembly, are alone in rejecting the plan. The main Serb republic is under heavy pressure from the United Nations, including economic sanctions, to impose the plan on their ethnic kin in Bosnia.

"We should not make any radical changes to the plan," Lord Owen said. "Russia is being very supportive and now wants to see it carried out."

"We need now to have some high quality troops," he said. "Even a contribution of 2,000 from the Russian Federation quickly would be very helpful."

Mr. Kozirev said international peacemakers had made no firm proposals on what to do if the Bosnian Serbs rejected the peace plan. He ruled out lifting an arms embargo to supply Bosnia's Muslims, an idea put forward by Secretary of State Warren M. Christopher during a tour of Europe earlier this month.

He said this would leave Bosnian Serbs without any motive for restraint and might

prompt them to take rapid advantage of their military superiority.

The Bosnian Serb leader, Radovan Karadzic, said Saturday that he would demand a new peace plan for Bosnia if his people reject the existing plan in their referendum.

He said he would call on the former Soviet leader, Mikhail S. Gorbachev, who runs a policy institute in Moscow, to draw up a new plan.

**Foreign Ministers to Meet**  
*Paul Lewis of The New York Times reported from the United Nations in New York:*

The Security Council plans a rare meeting of members' foreign ministers on Friday to review progress toward peace in Bosnia and other trouble spots and take stock of the growing UN peacemaking role in the world, diplomats announced.

The meeting of the Council's 15 foreign ministers was called by Russia, this month's president, and will be led by its foreign minister, Mr. Kozirev, said Russia's UN representative, Yuli M. Vorontsov.

There was speculation among diplomats that the council would seek to add authority to several resolutions it is preparing by ask-

ing the foreign ministers to approve them in person next week. These resolutions would send up to 1,500 monitors to check Belgrade's pledge to cut vital supplies to Bosnia's Serbs until they sign the international peace plan and also establish an international tribunal to try war crimes in the Balkans.

In addition, France wants a resolution providing armed protection for a million or more Bosnians now living in the "safe areas" the council has voted to establish in Bosnia and Herzegovina.

France called on the United States and Russia to join other countries in sending a force of up to 40,000 troops backed by air power to protect these safe areas against attack. France also suggested that the UN force already deployed in Bosnia and Herzegovina be given a new mandate to deter aggression as well as to protect aid deliveries.

France set out several alternatives for protection of the safe areas the council has declared in the predominantly Muslim enclaves of Sarajevo, Srebrenica, Tuzla, Bihac, Zepa and Gorazde.

It argued that the presence of American and Russian soldiers would give such a protection force credibility and reduce the risk that it would need to use military force.



A Bosnian sniper taking aim at a Serbian position from a building in the capital, Sarajevo.

## SERBS: UN Peace Plan Is 'Dead,' Bosnian Serb Says

(Continued from page 1)

of Serbian forces suggested that the pattern among the 1 million voters eligible to cast ballots was similar almost everywhere.

Official results of the two-day referendum were expected on Monday.

Peko Cvorovic, 50, a worker in Pale, said he had voted against the plan on the first question and for an independent Bosnian Serb republic on the second.

"We gave the Muslims a chance to live with us in peace for 45 years, and they turned on us and stabbed us in the back," he said.

He said of the peace plan, "It would shut us in enclaves and separate us from Serbia and the Serbian people."

Anđelko Ikonc, 36, said he did not think more than 10 percent of voters would back the plan.

"I've been wounded three times, and I've still got a bullet in my leg," he said. "I cannot live with them again. Never."

Although some Muslims voted in some Serbian-controlled towns, they were expected to make up a tiny minority of those casting bal-

lots. Serbian nationalist leaders predicted that more than 90 percent of the voters would reject the peace plan. Such a result has also been predicted by Western diplomats, who have described any peace referendum as a sham.

Nonetheless, after the Bosnian Serbs scheduled the referendum, European governments urged last week — and the Clinton administration agreed — that the West should defer any possible military action until the Bosnian Serbs had a chance to consider the plan.

In fighting on Sunday, Bosnian Croatian and Muslim forces pounded each other with artillery, mortars and rockets in the southwestern city of Mostar. But warring Serbian and Croatian forces signed a cease-fire on Sunday covering the whole of Bosnia and due to come into force at noon on Tuesday.

Representatives of the Muslim-led government forces did not attend the talks.

Numerous Bosnian cease-fires have been signed in the 13-month-long war. While fighting continues, recent pacts have lowered the overall level of hostilities.

Bosnian Croatian forces were sending a column of trucks with reinforcements and three armored vehicles toward Mostar and were hammering Muslim positions in the city with artillery and missiles, witnesses in the area said.

The Croatian press agency HINA reported heavy artillery and infantry battles along the Neretva River, which runs through Mostar and marks the front between the rival forces.

Sarajevo radio reported Croatian shelling in Jablanica, near Mostar and site of a hydroelectric plant, and new clashes in the northwest town of Goranjski Vakuf. The reports could not be independently confirmed.

The Muslim-dominated Bosnian government issued its strongest denunciation yet of neighboring Croatia over the weekend, accusing it of sending troops into Bosnia. The allegation could not be independently confirmed, but suspicion was mounting in Sarajevo of a Serbian-Croatian deal.

(AFP, AP, Reuters, NYT)

## DANES: Even a Solid 'Yes' Won't End EC Cleavages

(Continued from page 1)

The Community faces a "down period" similar to the late 1960s or early 1980s, said Peter Ludlow, director of the Center for European Policy Studies. Those were periods of effective gridlock before EC leaders were able to muster the consensus to negotiate the admission of Britain and Denmark in 1973, and the single-market program in the mid-1980s.

One feature that is common to all of them is "regime change" in the member states, Mr. Ludlow said.

"Now quite clearly the change of the guard is happening everywhere," he said.

He sees little prospect of any broad strategic change in Europe ahead of the French presidential election in 1995.

A "yes" vote also will do little immediately to help European leaders combat the deepening recession and restore credibility to Maastricht's clearest goal: economic and monetary union.

The currency crises that have rippled across Europe following last year's vote on the treaty in Denmark have heightened German wariness of giving up the Deutsche mark and made its partners all the more resentful of Germany's economic hegemony.

Roland Leuschel, economist and director at Banque Bruxelles Lambert, says the Bundesbank must cut short-term rates to 3 to 4 percent in the next few months from 7.60 percent now, or risk triggering a surge in unemployment and social unrest among its partners.

But such rate cuts risk undermining credibility in the mark given Germany's high inflation, he added.

The recession on the Continent has so many government coffers hemorrhaging red ink that only Luxembourg meets the Maastricht criteria for inflation and government deficits and debt. Almost no one believes that a majority of EC states can meet those criteria by 1996, the first date envisaged in the treaty, and there are strong doubts that even a core including Germany, France and the Benelux countries would be ready by 1999, the second date.

"It may take some time more than was envisaged," one diplomat said, speaking on condition of anonymity. But for the moment there can be no question of relaxing the stringent requirements, he added.

Whatever problems remain to be resolved in the event of a "yes," they are a delight to consider compared with the likely consequences of a "no."

A second Danish rejection of the treaty would be a "disaster" for currency stability, producing the same type of speculation and devaluation only "multiplied by two, three or four," Mr. Leuschel said.

Mr. Davignon said that a new round of uncontrolled competitive devaluations would pose a "fundamental risk" to the Community's single market.

A "no" vote also would imperil the ratification process in Britain.

Although, as one diplomat said, "we have no blueprints" to deal with a "no" vote, a meeting of the

nine-member Western European Union in Rome on Wednesday probably would become the vehicle for an emergency EC meeting to chart the future.

That would require a new treaty, since Maastricht required unanimity. It is unclear whether Denmark would be asked to leave the Community or be relegated to a secondary, reduced status.

But the betting among Danish and European leaders is that the voters will go along this time.

Although Danes still fear ceding power and identity to what they see as a meddling bureaucracy in Brussels, they worry that a second "no" after having won exemptions from Maastricht would exclude them permanently from decision-making in the European Community.

Most Danes appear to agree that Europe's most pressing crisis — the war in Yugoslavia, the need to ensure continued economic and political change in Eastern Europe, and deepening recession in Western Europe — require a concerted EC response.

"It's too dangerous to say 'no' this time," said Holger K. Nielsen, whose Socialist People's Party abandoned its former opposition and joined six of the seven other parliamentary parties to urge a "yes" vote.

## BRIDGE

By Alan Truscott

THE result of the annual battle to determine the Grand National Team champions for New York City and Long Island is coming into clearer focus.

In one semifinal, played in New York, John Rensstorff, Bill Ehlers, Michael Radin, all of Manhattan, and Michael Kopera of Brooklyn won by 36 imps against Brian Glubok, Jim Rosenbloom, Arjun Ray, Fred Chang, Jared Lillenstein and Win Allegretti of Queens.

The Rensstorff team, hoping to advance to national playoffs in Washington in July, will eventually play the winners of the other semifinal, scheduled May 23.

Radin and Kopera gained heavily for their team by fine bidding on the diagrammed deal, on which they located two major-suit fits and then played a grand slam in a minor.

Kopera as South indicated 3-5-1-4 distribution by showing hearts and clubs before supporting spades. His cue-bid in diamonds provoked North into using the modern form of Blackwood, and he discovered that South held three key cards, clearly the heart king and the minor-suit aces.

Five diamonds was a further inquiry, and the jump to six hearts

indicated possession of the heart queen.

Radin then bid seven clubs, since he could count five trump tricks.

**NORTH**  
 ♠ A K 10 4  
 ♥ A J 3  
 ♦ 8 2  
 ♣ K Q 8 7

**WEST**  
 ♠ Q J 8 6  
 ♥ 8 2  
 ♦ J 9 7 6 3  
 ♣ 10 4

**EAST**  
 ♠ 5 2  
 ♥ 8 5 4  
 ♦ K Q 10 5 4  
 ♣ 9 8 2

**SOUTH (D)**  
 ♠ 9 7 3  
 ♥ K Q 10 7 6  
 ♦ A  
 ♣ A J 5 3

East and West were vulnerable.

The bidding:  
 South West North East  
 1 ♠ Pass 1 ♠ Pass  
 2 ♣ Pass 2 ♠ Pass  
 2 ♠ Pass 3 ♠ Pass  
 4 ♠ Pass 4 N.T. Pass  
 5 ♠ Pass 5 ♠ Pass  
 6 ♠ Pass 7 ♠ Pass  
 6 ♠ Pass

West led the diamond six, including one ruff, five heart tricks and three side-suit winners.

This contract proved easy to make, and gained 10 imps when the opposing North-South rested in six hearts and made a fortuitous over-trick.

## CHINA: Warlord Loses

(Continued from page 1)

and beat him as well. Mr. Wang released him and Mr. Liang only after getting a \$700 ransom.

When the central authorities heard about the problems in early 1991, they demanded that three senior local officials make a special trip to Beijing to report on the case. Mr. Wang escorted the officials in his own car and paid for their room and board in Beijing.

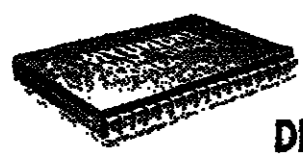
The officials not only denied that Mr. Wang was creating any problems, but also forged documents giving evidence in his favor. When the central authorities finally arrested Mr. Wang and his deputy late last year, they discovered that the factory had illegally made \$226,000 from selling 20 different kinds of fake medicines.

Finally in March — six years after Mr. Wang opened his factory and five months after he was arrested — Shenzhen's county chief and party secretary were temporarily replaced and put under investigation, according to a Henan provincial spokesman, Zhang Yibing.

Many local farmers had known that Mr. Wang's medicines were fake, and they often reported him. But Mr. Wang's factory brought a large amount of income to the county, which pleased local officials, and Mr. Wang got even more cooperation from them by bribing them, according to accounts in official Chinese newspapers.

# From CHIPS To SHIPS

Hyundai is continuously committing itself to some of the world's most advanced technologies and innovations to help you grow your business and to help build a better future for everyone.



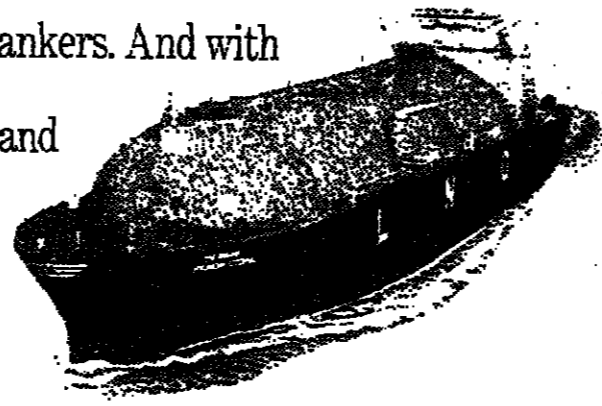
One of our latest achievements was the introduction of the **64M DRAM chips** in 1992 less than 4 years after the development of the 1M DRAM. Hyundai is the new force in electronics and telecommunications around the world.

Having earned global fame for the Pony, Sonata and Lantra in the world's auto markets since 1986, Hyundai has developed the HCD-2 sports car, taking automotive aerodynamics into a new age.

Our expertise in large scale engineering and construction projects worldwide, including turn-key base plant projects, has earned us more than US\$24 billion in overseas contracts over the period 1966 to 1992.



As one of the world's leading shipbuilders for over 20 years, we have delivered over 530 vessels including the world's largest super tankers. And with our reputation for the highest levels of technology and innovative design, Hyundai has recently launched the remarkable Moss-type LNG carrier.



Our commitment to technology is also illustrated in such areas as developing a maglev vehicle, a revolution in mass transit system.

From chips to ships...

Hyundai. Making life better through quality and innovation.



Building a better future for everyone.

AUTOMOBILES, ELECTRONICS, SHIPBUILDING, ENGINEERING AND CONSTRUCTION, MACHINERY AND EQUIPMENT, PETROCHEMICALS, TRADING AND TRANSPORTATION.  
 Find out how Hyundai can help you: Hyundai Corporation, K.P.O. Box 92, Seoul, Korea. Tel (82-2) 746-1878, Fax (82-2) 741-2341.

Handwritten text in a box: 02110120

مجلس التحرير

# Can you spot the typical European?



The concept of a "typical European" – an abstract man-in-the-street sometimes used as a basis

**Even within the Common Market, Europeans, aren't all alike.**

for corporate strategic planning – is rooted in a misunderstanding.

Indeed, the closer you look at the New Europe, the more clearly its complexities stand out.

This is due not only to obvious historic, linguistic, cultural and economic causes. It also reflects a tendency towards greater structural differentiation.

This trend will no doubt intensify in view of the desire by six EFTA countries

to join the EC and given recent moves towards closer cooperation within the framework of a European Economic Area (EEA).

And ultimately, the success of economic reform in Central and Eastern Europe will also have a substantial impact.

Among other things, the more liberal environment in the future could lead to a merger of national economic centers into larger, regional markets, without regard to internal political boundaries.

Markets for goods and services will change, and there will be an increase in the international division of labor. And

of course, competition will heat up.

Dynamic companies wishing to consolidate or expand their positions in the New Europe will be dealing not only with one of the most interesting of the world's regions, but also with one of its most complex marketplaces.

That is why Dresdner Bank gives such high priority to helping customers succeed in the Europe of the future. True to this ongoing commitment is our specialized international banking subsidiary in Luxembourg – Europa Bank – who can help you obtain subsidies under regional, national or EC support programs.

In the final analysis, the expertise and commitment of our employees are the keys to ensuring that our customers derive maximum benefit from Dresdner

Bank's worldwide network, vast experience and ability to respond quickly and flexibly to rapidly changing situations.

Although we do not underestimate the challenges posed by the New Europe, we face the future with optimism and confidence.

After all, we're based in the center of Europe. And that gives us a home team advantage.

**New for 1993 – a borderless, yet highly complex marketplace.**

Dresdner Bank



little attention when it comes that food is a automobile for zing to eat. in

INTERNATIONAL Herald Tribune

Published With The New York Times and The Washington Post

Coax the Mideast Players

Nineteen months after they began so promisingly in Madrid, the Mideast peace talks risk turning into an empty ritual...

Work on the Skills Gap

Vocational education is enjoying one of its periodic upswings. This happens whenever educators, industry and government fret in unison about the occupational skills of the work force...

Saving Women's Health

The staple image of overpopulation is a ravaged landscape: rivers thick with pollutants, land on which there is no topsoil...

Other Comment

The Making of a President In an ideal world, the failings of the first three months would serve as important lessons for the administration to use in the more important battles ahead...



Are There Any Grown-Ups in the White House?

WASHINGTON — There are many objective reasons to beware of American involvement in the Balkans. But one largely unspoken reason lurks in the background...

American Irresolution Buys Time for the Belligerents

BOSTON — At a dinner the other evening where David McCullough received an award for his wonderful biography of Harry Truman...

Arming the Muslims Won't Save Lives

RUSSELLS — Lifting the arms embargo for the Bosnian Muslims would result in a competitive supply race to the embattled factions by their half-hidden supporters...

From Japan, a Hapless Clue

BANGKOK — Many are jeering at the unwillingness of Japanese to get themselves killed trying to bring peace and democracy to Cambodia...

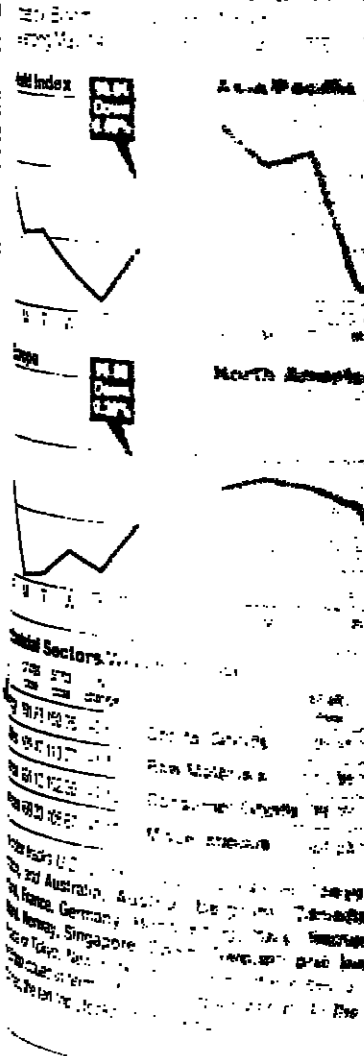
Job Clouds Don't Just Drift Away

WASHINGTON — It's not so much "The Economy, Stupid" — the grand theme of the Clinton campaign — but "Jobs, Stupid!" that identifies the president's current problem...

MARKETS More Big Offers

Various market news snippets and financial data.

THE TRIB INDEX



CURRENCY RATES

Table with columns for various currencies and their exchange rates.

INTERNATIONAL HERALD TRIBUNE KATHARINE GRAHAM, ARTHUR OCHS SULZBERGER Co-Chairmen... LEE W. HUEBNER, Publisher...

Handwritten Arabic text at the bottom of the page.



WEEKLY INTERNATIONAL BOND PRICES

Provided by Credit Suisse First Boston Limited, London, Tel: 322 40 00. Prices may vary according to market conditions and other factors. May 14

Canadian Dollars

Table of Canadian bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

ECU Straights

Table of ECU straight bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Pound Sterling

Table of Pound Sterling bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Yen Straights

Table of Yen straight bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Other Bonds

Table of various international bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Other Bonds

Table of various international bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

NEW YORK (AP)

The following are the prices of the most actively traded international bonds in New York on May 14.

Table of New York bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am Perpetual

Table of American perpetual bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am 12-30

Table of American 12-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am 1-30

Table of American 1-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am 2-30

Table of American 2-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am 3-30

Table of American 3-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am 4-30

Table of American 4-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am 5-30

Table of American 5-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am 6-30

Table of American 6-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am 7-30

Table of American 7-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Am 8-30

Table of American 8-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

MUTUAL FUNDS

Figures as of close of trading Friday, May 14.

Table of mutual fund prices with columns for Fund Name, Price, and Yield.

US Gov 10-30

Table of US Government 10-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

US Gov 12-30

Table of US Government 12-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

US Gov 1-30

Table of US Government 1-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

US Gov 2-30

Table of US Government 2-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

US Gov 3-30

Table of US Government 3-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

US Gov 4-30

Table of US Government 4-30 maturity bond prices with columns for Issuer, Coupon, Maturity, Price, and Yield.

Table of late trade prices

TO OUR READERS IN BUDAPEST Hand delivery of the IHT is now available on the day of publication. Call today: 175-7735

Handwritten signature or mark at the bottom of the page.



New International Bond Issues

Table with columns: Issuer, Amount (millions), Mat., Coup. %, Price, and Terms. Includes sections for Floating Rate Notes and Fixed-Coupons.

Bond Investors on Alert for More Inflation Signs

Compiled by Our Staff From Dispatches NEW YORK—After gazing on a deluge of bad inflation news last week, the Treasury bond market will be watching this week for any signs of official tightening in U.S. interest rates...

A "knee-jerk reaction to developments in the bullion markets," where gold prices are rallying "or to one month's worth of data on wholesale and retail price fronts

"I don't think the Fed has bought into an inflation rate at 3.5 percent going to 4 percent, and until the demand side looks a little healthier, they're going to be stuck here," he said.

U.S. CREDIT MARKETS

seems highly improbable," Mr. Sullivan said. "It still seems likely that the best-case scenario, at least for the time being, is that policy will remain on hold."

Higher interest rates would hurt prices at the short-end of the Treasury market the most, since the central bank sets monetary policy by manipulating rates of shorter-term maturities. Higher interest

rates in the economy hurts the value of existing securities, tending to push down their prices as their yields rise to meet the prevailing levels.

In remarks apparently designed to soothe the battered bond market, President Bill Clinton said at a news conference Friday that long-term inflation remained subdued despite this week's reports.

The Treasury secretary, Lloyd Bentsen, predicted interest rates would remain "relatively stable," adding that if Mr. Clinton's deficit-

cutting package goes through rates will stay low compared with levels of the past 20 years.

At the Treasury's latest quarterly refunding Tuesday through Thursday to fund the deficit, yields plummeted to their lowest level on record as the government unloaded \$35.3 billion of new 3-year notes, 10-year notes and 30-year bonds.

In trading, the 10-year Treasury note ended 25/32 lower on the week at 101 23/32, for a yield of 6.01 percent, up from 5.90.

(UPI, AP, Knight-Ridder)

The Week Ahead: World Economic Calendar, May 17-21

World Economic Calendar for May 17-21. Includes sections for Asia-Pacific, Europe, and The Americas with specific dates and events.

Bank of China to Issue Eurobonds

BEIJING — The Bank of China is expected to return to the Eurobond market within two months, the China Daily reported on Sunday.

The bank is one of China's leading vehicles for raising overseas funds and Mrs. Huo said one reason it was returning to Europe was to diversify its markets.

The five- and seven-year notes would help finance telecommunications and energy projects, she said.

National Westminster Bank advertisement. Includes text: "National Westminster Bank (Incorporated in England with limited liability) U.S. \$500,000,000 Junior FRNs"

BONDS: More Big Offerings From Sovereign Issuers

(Continued from first finance page) points over U.S. paper if at least \$300 million of two issues totaling \$4 billion maturing in 1999 and 2001 are put up for exchange.

Sweden's \$1.5 billion of five-year floating-rate notes reopens the long dormant jumbo floater market. Investors are offered a coupon equal to the three-month London interbank offered rate, currently 3.25 percent.

The European Investment Bank added 2 billion francs to its 2 billion franc issue launched at the end of last month. These five-year notes, carrying a coupon of 6.75 percent, were sold to yield investors 10 basis points over French government paper.

54% of Mirror To Go on Block In a Share Sale

LONDON — The administrator of Mirror Group Newspapers Plc is planning to sell the 54 percent stake he holds via a share sale that is expected to raise £300 million, the Sunday Times reported.

The share sale is expected to be accompanied by a rights offering, which will enable Mirror to "redefine its stringent banking agreements with its syndicate of bank creditors, owed more than £400 million," the newspaper reported.

Mirror had a pretax loss of £84 million in 1992, after having made a £47.3 million (£72.1 million) profit, restated to take into account adoption of a new financial reporting standard.

OECD: Now, Less Growth and and More Joblessness

(Continued from first finance page) took effect this year nor deregulation of financial markets "appear to have been causes of the current downturn." Nevertheless, it says, "their impact was not well judged."

The secretariat forecasts "a significant easing in German interest rates over the next 18 months" and a "major unwinding" in the high-risk premiums in countries participating in the European Monetary System.

"It is essential," according to the report, "for the German authorities to resolve the fiscal problems posed by the burden of transfers" to its new Eastern states.

Euromarkets At a Glance

Table with columns: Eurobond Yields, Weekly Sales, and Labor Rates. Includes data for various currencies and markets.

Now Available By Airmail

Advertisement for The Washington Post National Weekly Edition. Includes images of the newspaper and a subscription order form.

title attention when it comes that food is a automobile for being to eat, in



السؤال الأول

ADVERTISING SECTION

ADVERTISING SECTION

# TELECOMMUNICATIONS

## T H E • N E X T • M O V E

### Creativity: Beyond The Technologies

When Nigel Short and Garry Kasparov settle down across the board in their world chess championship match in London in September, thousands of people around the world will be playing along with them.

A special "Predictamove" international telecommunications network is being set up to allow chess fans to follow the play move by move on their televisions or personal computers, and then predict the next move. A computer will collect the fans' predictions and show them from London: 40 percent say the next move will be black bishop to C4, 35 percent say black bishop to B5, 25 percent say black queen to D3. Computers will keep track of which fans make the most correct guesses throughout the match, and the top two get to play the real Short and Kasparov when the championships are finished.

Predictamove is a small example of the creativity in 1990s telecommunications — creativity that is born not only of new technology, but also of the development of new markets and the deregulation that is opening old markets to new competition. In Eastern Europe and the former Soviet Union, for example, satellite and cellular networks are providing a technological bridge for doing business while the antiquated national systems are replaced or rebuilt. Deutsche Telekom is leading a big permanent satellite-

Estimated market for PDAs is 100 million

supported network to link the former Soviet republics with each other and the West, but in the meantime is relying on a temporary satellite system for a fast data highway. But the new markets are not limited to Eastern Europe or the former Soviet Union. Northern Telecom, the Canadian telecommunications equipment manufacturer, is predicting that continuing strong demand from Latin America and eastern Asia will help boost earnings (\$76 million in the first quarter) during the second half of this year.

Alcatel, which got more than half its \$1.3 billion earnings last year from telecommunications, expects much of the next decade's increase in business to come from the doubling of the number of telephone lines in Asia and Latin America. In some ways, however, the new markets are already old news in global telecommunications. The industry's attention in 1993 is focused on the EC's moves toward deregulation and the haggling between the United States and Britain over equal access to each other's markets. Late last month, the EC said it will ask its member states to end their national telecom monopolies — in effect opening their markets to free-for-all competition — by 1998.

The changes mean that the national telephone companies in the EC countries, where the market in telecommunications products and services will top \$150 billion this year, will no longer be able to set charges that are now among the highest in the developed world. Even in Britain, where Mercury Communications began competing with the former national monopoly British Telecom (now BT) several years ago, typical local, national and international tariffs remain much higher than in the United States. U.S. long-distance rates fell by 45 percent between 1984 and 1991, and it is not unusual for calls between America and Europe to be half as expensive when dialed from the States instead of from Europe.

Big multinational and transnational companies are also leading the way in establishing global corporate communi-



cations networks that allow executives to contact each other or tap into data bases more easily. Ideally, an executive in a conglomerate's New York office will be able to reach a colleague in Paris or Tokyo just as easily as in an office down the hall; instead of the user needing to dial an international code, a country code, an area code, the local exchange and then the four-digit personal number, calls may be able to jump across the Atlantic when the user merely dials the four-digit personal extension.

Competition to supply and serve these global corporate networks is at the heart of moves by both BT and AT&T to promote open competition — and eventually to enter the other's market. This seems likely for the future, and will have far-ranging ramifications throughout the telecommunications industry. Britain and the United States are two of the markets where the major companies have the most to lose from open competition; if they are willing to go for it, why shouldn't everyone else?

There are other factors, too. If AT&T, BT and others get their way and become global telecom superplayers, international commerce — and particularly the big multinationals and transnationals — could benefit through the worldwide harmonization of telephone numbering systems, long-distance tariffs and technical standards. A standard worldwide numbering system would allow customers to keep the same numbers for life, wherever they are in the world. A standard fee structure would end the higher fees for some calls just because they are made from certain parts of the world; one Italian carmaker reportedly estimates it would have saved 24 percent of its annual phone

bill if Italy had British long-distance rates and 43 percent if it had U.S. rates.

And standardized interconnection between the phone systems in different countries would mean faster, cheaper, higher-quality service, whether for voice or data transmissions. As part of its challenge to BT's application in the United States, AT&T is calling for both companies to drop their "wholesale" trans-Atlantic charges — the amount they bill each other for making the local connections for U.S.-U.K. calls — by 60 percent.

While AT&T's and BT's global corporate communications networks are an example of the innovation that will grow out of deregulation and open markets, there are many other new products and services coming to offices and homes over the next few years. For big businesses, one of the biggest transitions in the mid-1990s is the move toward electronic data interchange. EDI is paperless commerce — companies order and bill each other electronically, via computer and modem. EDI is being embraced first by companies, such as grocery chains, that do a lot of detailed ordering and billing with many different suppliers.

In New York, the Securities and Exchange Commission (SEC) is now requiring its 500 largest companies to file financial disclosure documents directly into the SEC's Electronic Data Gathering and Retrieval system (Edgar). By 1996, when all 14,000 companies required to file with the SEC are using Edgar, too, more than 10 million pages

Continued on Page 13

### Asia/Pacific Market In the Vanguard

New and expanding markets, new technologies, new entrepreneurial attitudes to the market: Asian telecommunications is benefiting significantly from all three.

In China and Indochina, the Far East has two of the world's fastest-growing telecommunications markets. The region has led the world in the effective introduction of CT2 technology, an inexpensive form of cellular telephony, and individual national telecommunications services are in the forefront of such advances

Liberal regulations are aiding growth

as digitizing their networks, converting to fiber-optic cable and introducing videoconferencing and global virtual private networks. Asian governments are breaking down regulatory barriers that in the past have prevented outside firms from entering protected markets. In response, not only are overseas companies entering Asia; the local PTTs are themselves reaching out to regions far beyond their own.

East Asia is rapidly bootstrapping itself into equality with Europe and North America. According to some optimists, it may go even farther. "Asia," says Ian Stone, managing director of Hongkong Telecom CSL, "is now in a position to leapfrog both Europe and the United States in terms of telecommunications infrastructure sophistication."

In regional terms, the Far East is in the process of laying a remarkable network of fiber-optic cable that will carry high volumes of voice, data and fax messages within the region and between it and North America. Since April 1988, when the \$598 million, 77,000-kilometer (47,800-mile) TPC3 cable went on line to link Japan and Guam with Hawaii and the U.S. mainland, about 10 major cables have been laid underwater in Asia to connect Hong Kong, Japan, Korea, Taiwan, the Philippines, Singapore, Malaysia, Australia and New Zealand. Each can carry a minimum of 15,000 phone calls simultaneously.

That capacity will inevitably increase. Last June, Japan's KDD carried out a successful laboratory test with AT&T on the world's longest optically amplified fiber-optic system. A 9,000-kilometer test bed operated error-free at a transmission rate almost 10 times as fast as the highest now used.

Such a system could transmit the entire contents of the Encyclopaedia Britannica in six seconds. "This magnitude of capacity will allow [us] to offer customers significantly expanded communications services and increased reliability of the Pacific cable network as a whole," says K. Nozaka, executive vice president of submarine cable planning for KDD.

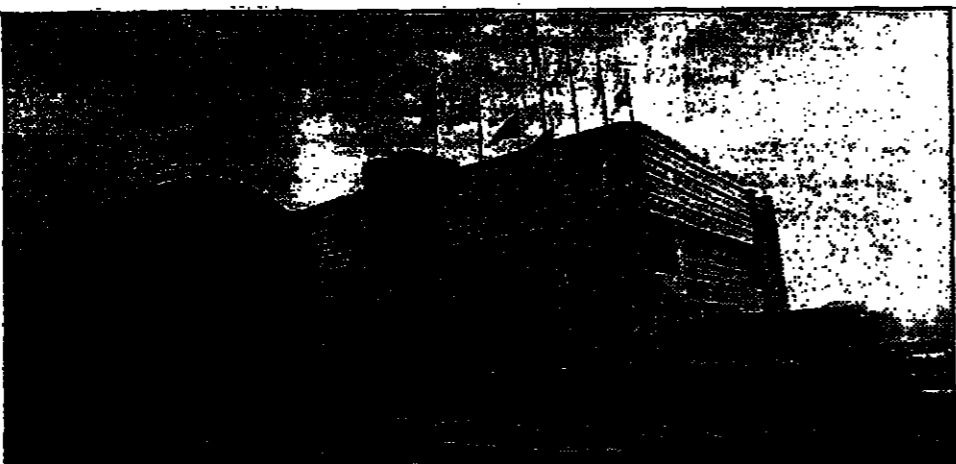
Fiber-optic cable has several advantages, but it is not the only answer to Asia's needs for telephone networks. "Despite the relative low cost of fiber optics, the sheer volume of cabling that needs to be done in Asia makes it an expensive proposition," explains Ron Cattell, director of marketing for Datacraft Asia. "In China, Indonesia and Malaysia, the distances are enormous, and satellite technology makes much more sense in many cases."

A satellite infrastructure is also available in Asia. Indonesia's series of Palapa satellites has served the region for several years. And

Continued on Page 15

rmoil  
otiation  
rendum  
osnia  
alks

0



Singapore's World Trade Center hosts more than 80 shows each year.

### Creating a Telecommunity

The latest telecommunication equipment and systems, information technology (from office networks to artificial intelligence) and ideas and techniques for the future will be on display at Asia-Telecom 93 in Singapore from today until May 22, 1993.

Over three hundred exhibitors, including 14 countries represented by their own pavilions, will be vying for the attention of private and government telecommunication providers and users in what has been described as one of the most important telecommunications events in the region.

With the theme "Telecommunity: the next era of growth," the exhibition and forum are hosted by Singapore Telecom and the Telecommunication Authority of Singapore, and organized by the International Telecommunication Union. Wee Kim Wee, Singa-

apore's president, and Pekka Tarjanne, secretary-general of the International Telecommunication Union, are among the keynote speakers at the official opening, which takes place on May 17 at the 22,000-square-meter (236,806 square-foot) exhibition site.

During the Asia Telecom 93 Forum, decision makers in both the public and private sectors will discuss the future of telecommunications in the region, focusing on policy, technical, regulatory and economic matters. Participants have traditionally used this platform to make pre-announcements of investment plans, liberalization policies and telecommunications objectives and strategies.

In the next five years, the Asia-Pacific region is expected to make up 31 percent of the total world market for telecommunications

and information technology.

At the same time, a conference entitled High Technology and Profitability, cosponsored by the International Herald Tribune and the International Chamber of Commerce, will be taking place at the Regent Hotel in Hong Kong on May 17 and 18.

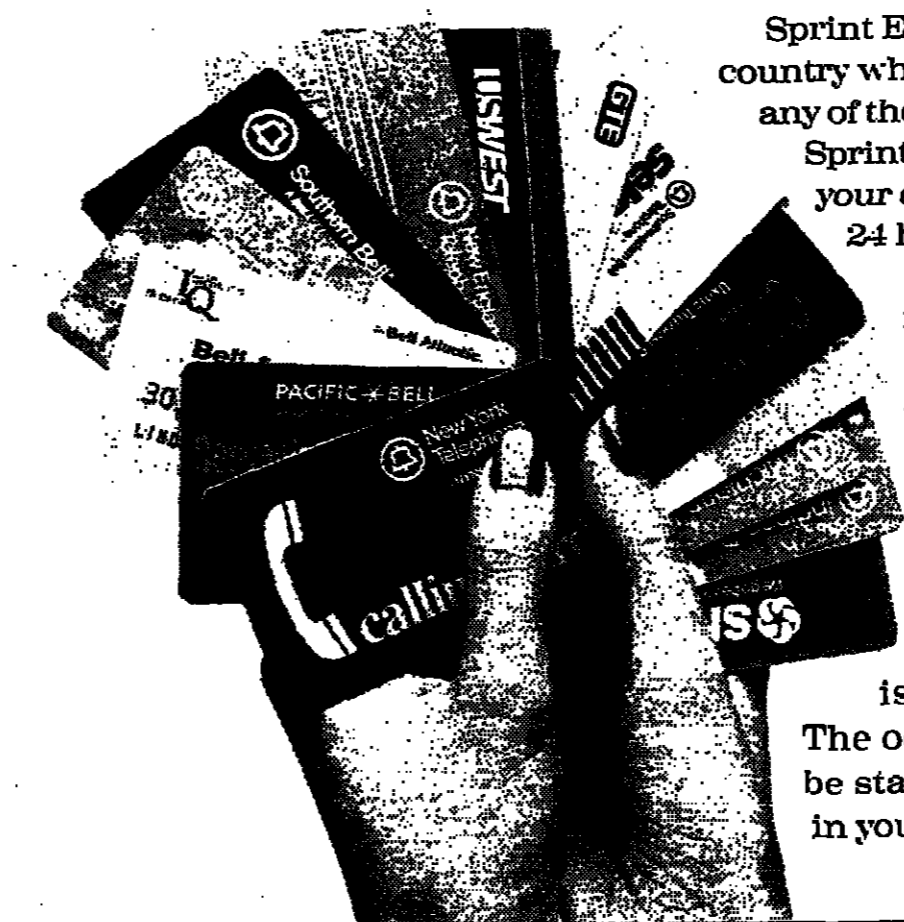
The keynote address will be given by Christopher F. Patten, governor of Hong Kong, and panel discussions on such topics as technologies of the future, corporate alliances, the Chinese market, developing countries and communications satellites will be conducted by influential businesspeople and government officials from the Asia-Pacific region. For more information, call Justin Smith, IHT Hong Kong, Conference Department at 852-861 0616.

Joseph R. Yogerst

Table of Contents	
Page 11	Overview of the Telecom Market The Asia/Pacific Region
Page 12	High-Tech Shows and Conferences
Page 13	Fiber-Optic Advances
Page 13	Interview With the Chairman of Singapore Telecom
Page 15	The Satellite Industry
Page 15	The U.S. Market
Page 15	New Products and Services
Page 15	Building the Electronic Superhighway

This advertising section was produced in its entirety by the supplements division of the International Herald Tribune's advertising department. It was written by Steven Bartlett in Paris, Peter Gwynne in Hong Kong, Timothy Harper in London, Joshua Jampal in Paris and Rich Tall and Steve Weinstein in the United States.

## How do you call a foreign country when you're already in one? Pick a card, any card.



Sprint Express® makes it easy to call a foreign country when you're already in one. Simply dial any of the access numbers listed below to reach a Sprint operator in the U.S. who can complete your call to almost anywhere in the world. 24 hours a day.

You don't have to be a Sprint customer. You can use your U.S. local calling card\* or Sprint's WorldTraveler FONCARD™. And you'll be billed on your regular phone bill. You can even make collect calls if you're calling the U.S.

Just think, no more hotel surcharges or fumbling for the right currency. With Sprint Express all you do is make your calls. Calling country to country is that simple.

The odds couldn't be stacked more in your favor. **Sprint.**

Sprint Express Countries	Access Numbers	Sprint Express Countries	Access Numbers	Sprint Express Countries	Access Numbers
Argentina	80	Canada (toll-free)	1-800-787-8777	China	010-108
Australia	001-800-777-1111	Denmark	171	France	011-33-1
Brazil	001-800-881-8777	Germany	011-49-30	Great Britain	011-44-1
Canada (toll-free)	1-800-787-8777	Hong Kong	001-852-2388	India	011-91-11
China	010-108	Italy	011-39-6	Japan	011-81-3
France	011-33-1	Malaysia	011-60-3	Korea	011-82-2
Germany	011-49-30	Netherlands	011-31-20	Philippines	011-63-2
Hong Kong	001-852-2388	New Zealand	011-64-9	Spain	011-34-91
India	011-91-11	Sweden	011-46-8	Switzerland	011-41-4
Japan	011-81-3	Thailand	011-66-2	Taiwan	011-886-2
Korea	011-82-2	United Kingdom	011-44-1	USA (toll-free)	1-800-787-8777
Malaysia	011-60-3	USA (local)	1-800-787-8777	Vietnam	011-84-2
Netherlands	011-31-20	USA (toll-free)	1-800-787-8777	Yemen	011-967-2
New Zealand	011-64-9	USA (toll-free)	1-800-787-8777	Zimbabwe	011-263-2
Philippines	011-63-2	USA (toll-free)	1-800-787-8777		
Spain	011-34-91				
Switzerland	011-41-4				
Taiwan	011-886-2				
Thailand	011-66-2				
Telnet	011-1				
USA (toll-free)	1-800-787-8777				
USA (local)	1-800-787-8777				
Vietnam	011-84-2				
Yemen	011-967-2				
Zimbabwe	011-263-2				

title attention when it comes nat food is a stonobile for ring to eat, in



# TELECOMMUNICATIONS

## Fiber Optics: Anticipating Future Needs

The telecom industry thrives on change. But when it comes to implementing this innovative technology, most European operators face the same perennial problem — the vast, valuable and extremely durable infrastructures that still support most of today's telecom services.

Leading-edge watchers tend to focus on the most dramatic advances — Berlin's switched broadband network, the new generation of fiber-optic highways that are being set up

### Fiber-optic cables will link 800 buildings in Paris

around the world or the potential for running interactive applications over cable television lines.

None of these advances comes close to the common telephone in terms of mass sales appeal, but all of them will probably be vital to the network of the future. As yet, with a few notable exceptions, they exist only in small pockets.

"It's a circular problem," says Werner Wieppert, in Bonn, where he is responsible for upgrading Deutsche Telekom's line transmission network. "In order to build the right type of

infrastructure you need to know what the customer will need in advance." He likens the process to laying out a route map, without necessarily knowing whether it will be followed by a tram, bus or motorcar. Now he is being given an opportunity to cover all of the options by laying what is known as fiber to the subscriber.

Mr. Wieppert is currently engaged in a project that will provide 220,000 homes in Leipzig with fiber-optic connections. The project, in turn, is part of a far broader program that could provide the new federal states with an additional 1.25 million lines by 1995. He calls it "a last chance to start from scratch."

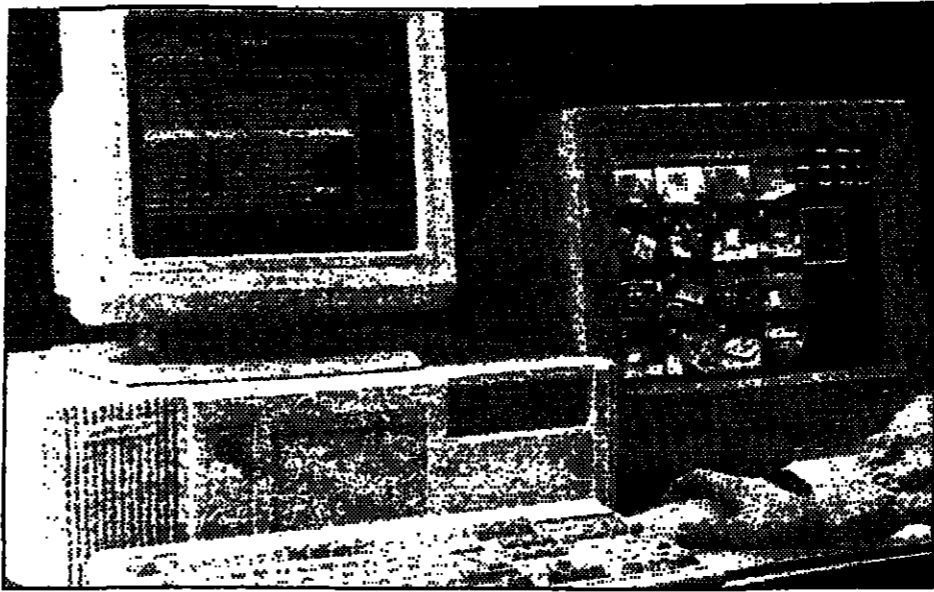
France Telecom was presented with a similar opportunity some 20 years ago and has since renewed almost its entire national network. Envisaging a future need for digital services, the French operator installed digital switches nationwide and was in the vanguard with its ISDN service Numeris.

It also laid on cable television connections for several million homes while, in Biarritz, the national research institute CNET helped mock-up a full-scale network to test the potential of videotelephony.

But today, despite its constant quest for technological leadership, France Telecom is still firmly tied to its largest single capital investment: copper and coaxial cable. "The network has an average age of probably 10 to 15 years — which means it could easily last until well into the next century," says Xavier Maffre in Paris, where he is the deputy head of France Telecom's network traffic, equipment, planning and operations team.

Meanwhile, the technicians will continue to innovate. Image compression techniques, for example, have enabled telecom engineers to cram more and more information into narrow-band services over copper or coaxial cable. Conversely, any cable television station that plans to carry high-definition television would be well advised to invest in fiber.

There will always be scope for fiber — even now, parts of the French infrastructure are being renewed year by year. A number of relatively small, mainly experimental projects concerning the domestic subscriber are scheduled or under way. But, with plans for the phased introduction of fiber-optic links to around 800 office buildings in Paris and the surrounding



Banking on image: the Numeris system in action. Among services telecom customers will demand in the future are interactive services.

region, it is apparent that big business is the real center of attention.

"We must be able to justify new technology investment in terms of new subscribers or services," says Mr. Maffre. "At present, our priority is the professional user, the type of client that is looking for a way to link up several local area networks, install a metropolitan area network, exchange massive data files or otherwise benefit

from the high speed, capacity and quality of a fiber-optic link."

Mr. Wieppert recalls his experiences with a similar fiber-optic overlay in Germany, which was set up in 1987 to link 80 cities. Despite its enormous potential, the network has mostly been used for videoconferencing and currently connects fewer than 1,000 subscribers.

"We haven't justified our invest-

ment on the basis of the future broadband services that it might one day provide. We took a very deliberate decision to justify fiber on the basis of existing narrowband ISDN services," Mr. Wieppert says, adding: "But its buildup in the distribution loop will enable many types of application later. We believe demand for broadband interactive services will increase."

Steven Bartlett

## Island Accepts Call to Innovate

Koh Boon Hwee, the chairman of Singapore Telecom, answers questions about the current and future activities of the state's telecommunications and postal authority.

*What are the major challenges facing the telecoms industry in Southeast Asia at the present time?*

The telephone penetration in many parts of Southeast Asia is still very low. Many areas have about six or nine telephone lines per hundred, compared to 40 to 60 in the developed world.

One of the first priorities for these countries is to increase the penetration of their basic telephone service. But at the same time, they are also finding it necessary to introduce mobile services such as cellular and paging, which are considered "luxuries" only the more well-to-do can afford. This is because businesspeople travel, and it is important to provide them with an alternative means of communication if you want them to stay and operate in your country.

*Will the gradual economic integration of ASEAN or other Asian trade blocs lead to more cooperation between the national telecom bodies from each country?*

We are already cooperating intensively among ASEAN [nations]. We have the first layer of the ASEAN submarine cable system and are implementing the second layer, which will be connected by optical fiber. Next year, we will have the fiber-optic connection between Singapore and Japan. By 1994, we will have an optic cable from Singapore to France. Last year, an optical fiber cable link between Singapore and Brunei was inaugurated. We also have a "No Accounting Arrangement" for international telephone service with Brunei.

*The telecoms industry in America is largely in private hands. Do you envision a day when that will be true in Southeast Asia too?*

I do not think that ownership of telecommunication entities in Southeast Asia will be in private hands, but there will be increasing joint ventures between private companies and governments in these countries to build telephone networks and offer services. It is expensive for the government to build telephone networks on their own because of conflicting priorities for financial resources. Private companies that have the financial and technical resources can offer these countries and organizations a quick solution by going into partnerships with them to build infrastructure and offer services. The 2 million line project in Thailand is one good example.

*Is Singapore Telecom helping to develop communication networks in lesser-developed countries like Cambodia, Vietnam, Burma and Bangladesh?*

We have found that the best way to pass on our experience and do a meaningful project overseas is through joint ventures. Singapore bills itself as the first country to have a

nationwide integrated services digital network (ISDN). How does ISDN translate into everyday applications for business and domestic users?

For both domestic and international ISDN communications, businesses are mostly conducting videoconferencing for both management and operational meetings. ISDN also transfers large volumes of data files and caters to overflowing traffic from leased circuits to ISDN circuits. The next wave of applications on ISDN is expected to be desktop-based.

*Has your Skyphone system with Singapore Airlines been a technological and marketing success? Will you be selling it to other airlines in the region?*

The success story of SIA was instrumental in our negotiations with other air-



Koh Boon Hwee, Singapore Telecom chairman.

lines in the region. Air China launched its first aircraft fully equipped with satellite communication equipment and using the Skyphone system on April 21, 1993. Negotiations with other airlines are still under way, and we are confident of further successes with them.

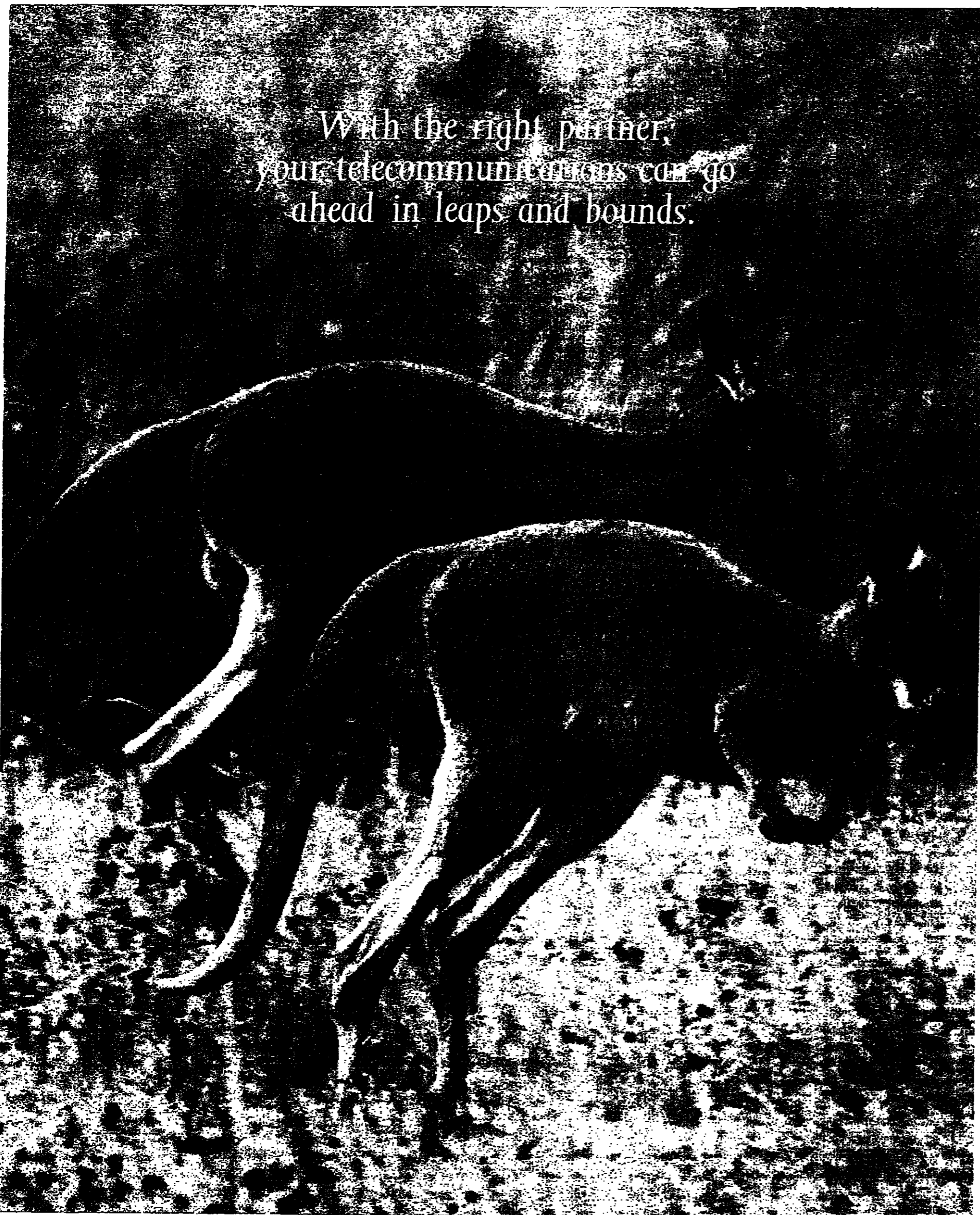
*Singaporeans were quick to grasp new technology like cellular phones, but the public has been more cautious in adopting other innovations, like Teleview, the interactive computer information service. Why is that?*

Customers definitely need time to understand the system and exploit the benefits of this technology. More and more PC users are recognizing the benefits of making use of Teleview to gain access to information and transaction services quickly in the comfort of their homes or offices. Now we have more than 15,000 Teleview subscribers.

*When people mention "high tech" in the telecom industry, they are usually talking about telephones. But what new technology is being applied to the collection, sorting and delivery of mail?*

Singapore Post was one of the first postal administrations to use the Optical Character Reader to sort mail in 1985. It is now planning to build a new sorting center that will fully automate the sorting of mail right to the delivery point. All the 48 counter services in post offices have been computerized since 1990. Singapore Post is among the first postal administrations in the world to have done so.

J.Y.R.



With the right partner,  
your telecommunications can go  
ahead in leaps and bounds.

Telstra is the new trading name for OTC Australia following a merger between Australia's international and domestic carriers OTC and Telecom, both renowned in Asia and throughout the world for technical excellence and innovation. Throughout Asia, many countries and organisations are working as partners with Telstra to establish telecommunications networks and services. For example, the formidable terrain of Pakistan is now criss-crossed with 2,100 kms of optical fibre cables, and Vietnam now has an international network second to none, resulting from Telstra's joint ventures. To find out more about how we can work together to solve your telecommunications problems, call Australia on +61 14 13 188 and talk to Telstra, your ideal partner.



# TELECOMMUNICATIONS

## Satellites a High-Growth Industry for the 1990s

The telecommunications slice of the space market represents a whopping three-quarters of the total pickings in commercial space. Earth observation, science and weather programs together share the remaining 25 percent.

Satellite telecommunications have remained the biggest section of marketable space, one that has kept launch operators and service providers scrambling for a piece of the pie.

The rise of small, mobile telecom terminals has made it possible to gain access to major international telecommunications networks from any point on the globe — the global village is almost a reality. Mobile services are one of the technological developments in satellite communications that continue to shrink the size and cost of equipment, which in turn brings national and international barriers down. It is just one of the high-growth

sectors tagged by experts as a boom industry for the 1990s.

VSATs, or very-small-aperture terminals, are becoming increasingly important as private business links. With a small satellite dish — 50 cm. to 2 meters (1.7 to 6.6 feet) wide — firms can have voice, data, fax, video and conference links, plus other options. Shipping and trucking industries rely on them to monitor and manage their fleets. Using the International Maritime Satellite Organization's (Inmarsat's) four satellites, headquarters can locate trucks or vessels at a moment's notice, advising them of road, sea or weather conditions or changes in deliveries. All a truck driver needs is a briefcase-sized transceiver, a small antenna on the roof of the vehicle and a PC-like data terminal, which is mounted on the dashboard.

VSAT revenues are ex-

pected to increase tenfold in this decade. One big push will come from the opening of Central and Eastern Europe. Lower costs and imminent industry deregulation will also contribute. "VSATs are the best way to outfit the less-developed parts of Europe, since they are within reach of everyone," says Jean-Jacques Dechezelles, part of the satellite directorate at Aerospatiale, one of Europe's major satellite manufacturers.

New applications generated by mobile communications are sparking a revolution among telecom satellite operators. Companies are now planning giant, global networks of multiuser VSAT systems. Iridium is the Motorola Corporation's ambitious plan to operate no less than 66 satellites in low-Earth orbit for handheld and small terminal communications users. Iridium, one of the first projects of its kind, as well

as the most expensive and undoubtedly the best publicized, is slated to begin launching its satellite fleet in 1996 — on alternate U.S. and Russian launchers, another first.

The plan has inspired other U.S. firms, like TRW and Qualcomm, as well as international groups like Inmarsat, which all have projects to orbit dozens of comsats to cover the Earth. Recently, a Russian defence group announced that it too is developing a similar global communications network, but with a new twist: it will use only three satellites. Their giant, 30-meter antennas will nevertheless enable total Earth coverage. A major American corporation is reportedly a partner in the venture.

In an ever-changing industry, analysts are constantly coming up with new studies to try to predict where the market is headed.

"Growth in the total global telecom market will be enormous in years to come," says Irving Goldstein, director-general of Intelsat. Emmanuel Sartorius, satellite director at Aerospatiale, says the telecom market will remain stable, which means big. "We see 10 to 15 satellites launched every year for the next 10

years," he observes. Demand remains great because countries that already have satellite systems now need new-generation birds.

Others, however, think the growth of fiber optics on the ground could skim off large chunks from services now offered by satellites. Fiber optics are increasingly being used for high-density telephone and television traffic, and the battle between satellites and fiber optics is heating up.

Though broadcasters say satellites can do the job more cheaply, there is probably room for both. Klaus Isenhardt, former international marketing chief for ArianeSpace and now a private consultant, believes satellites and fiber optics are complementary but very different. He says, "Fiber optics can take high-density data from one point to another point. They are ideal for marine cables. But if you're looking for point-to-multipoint services, to cover a whole country, then you're better off with satellites."

With or without fiber optics, satellites can count on developing nations, especially in Asia, to keep them healthy. A recent market study by ArianeSpace, operator of the highly suc-



The race is still on to develop affordable high-definition television.

cessful European launcher Ariane, says the Pacific zone will pretty much carry the market in the last half of the decade. Though the Asia-Pacific region is the world's most dynamic financially, only four countries currently have space telecommunications: Japan, Australia, Indonesia and Hong Kong. The Pacific push is expected to come mainly from Japan and nations like Thailand, Korea, Malaysia and Singapore, which will soon join the telecom satellite club.

Prophets also speculate on satellite size. The trend has been toward heavier payloads with more transponders. Satellite mass grew from two tons in the

1980s to three tons today. But satellite capability will likely increase, thanks to the recent development of data-compression techniques.

Tests of new digital television systems were recently carried out by Eutelsat (the 36-member European Telecommunications Satellite Organization) to determine their satellites' ability to distribute digitally compressed TV. Tests showed that four broadcast-quality channels can be conveyed through a single satellite channel. According to Eutelsat, this new digital transmission is good for telephony, business communications or TV.

Five digitally compressed Pal or Secam channels and 15 VCR-quality channels could be carried on just one transponder for direct reception on the ground. Since today's satellites can fly with up to two dozen transponders, hundreds of TV channels are just around the corner for viewers. Digital compression was the buzzword at last month's MIP-TV program market in Cannes.

TV networks are gearing up for this revolution, which will let them create new channels, cut broadcasting costs and develop what they hope will be a major new moneymaker: custom television, or TV à la carte. Joshua Jampol



Office on the move: portable faxes are changing ideas of where business can be done.

## Creativity for the 1990s

Continued from Page 11

of paper a year will be eliminated at the SEC.

The new technology will not be limited to big companies. Small businesses and the self-employed are expected to be prime targets in the market of an estimated 100 million people carrying a personal digital assistant (PDA) within the next few years. Sometimes characterized as an "electronic wallet," the hand-held PDA, about the size of a small paperback book, will combine telephone, electronic mail and fax functions. An electronic pen will replace the keyboard, so that users can get a fax on the screen, use the pen to scribble a reply and then push a button to have it transformed to text and faxed back.

The PDA is just one of the telecommunications innovations that might once

have seemed merely fanciful ideas and are now rapidly approaching mass-market availability. Examples include interactive television, which allows viewers to choose plot options as they watch a program, and PCs that respond to voice commands. Some startling changes are also in store for the old-fashioned telephone. Making good phone contacts is going to depend not just on what people say, but on how they look, with a new generation of video telephones that allow callers to look at each other or call up documents, TV file footage or other graphics.

In boardrooms and living rooms, the traditional handset, or even the supposedly new-fangled console with re-dial, memory and call-back buttons, will be replaced by "smart" phones with built-in screens and "smart cards" for touch-

tone access to shopping, banking and other retail services.

An American company, Communication Control Systems, is even marketing a "truth phone" that produces running digital voice-stress analysis readings that help reveal when a caller may be lying. Insurance companies are reportedly among the first customers for the truth phone, using it to determine whether claims from clients should be investigated. But certainly there are other creative applications.

Imagine what the host of a call-in talk show could do with a truth phone. Or how companies could use one to root out cheating on expense accounts: "Hello, this is the accounting department calling on the truth phone. About that conference in Mexico..."

Timothy Harper

### PanAmSat GOES GLOBAL

Announcing the PanAmSat Global Satellite System, the world's first private enterprise international satellite system. Offering global coverage with three new high-powered Hughes HS 601 satellites, PanAmSat will cover the world for all your communications needs ... domestic and international video, voice and data.

The new PanAmSat satellites will be the most advanced and highest powered international satellites in the sky. Start making plans to get on-board PanAmSat to cover the world.

<p><b>SATELLITE</b> PAS-2 PAS-3 PAS-4</p>	<p><b>COVERAGE</b> Pacific Ocean Region Atlantic Ocean Region Indian Ocean Region</p>	<p><b>LAUNCH DATE</b> Spring 1994 Winter 1994/95 Spring 1995</p>
---	---	--

100 Parkwick Plaza • Greenwich, Connecticut 06830 • USA  
Telephone: 1-203-622-6064 • FAX: 1-203-622-9163  
72 Rue de la Lombardie • Honore • 75008 • Paris, France  
Telephone: (33) 1 40 07 81 16 • FAX: (33) 1 40 07 80 40

# HOW ON EARTH DO YOU FIT THE EARTH ON A 2" x 3" CARD?

## TA-DAAA!

The MCI Card offers two international services—MCI World Reach and MCI CALL USA—which provide the business traveller with the assurance that no matter where a call is placed—country-to-country or back to the States—there'll be no delays, no foreign languages or currencies to deal with, no hassles with exchange rates and no excessive hotel surcharges to settle.

What you'll experience is a unique approach to international calling: easier, more convenient, more cost-effective.

If, by chance, you don't possess the MCI Card, please fill out the coupon below.

Nothing on earth fits your needs, or your wallet, as well as the MCI Card.

**YES, I WANT THE SAVINGS AND CONVENIENCE OF THE FREE MCI CARD**

<p>Name <input type="text"/> MI <input type="text"/> LAST <input type="text"/></p> <p>Mailing Address <input type="text"/></p> <p><input type="text"/></p> <p><input type="text"/></p> <p>Telephone Number Where You Can Be Reached <input type="text"/></p> <p><input type="text"/> Please send me <input type="checkbox"/> MCI Card(s)</p> <p>Please charge MCI calls to my current MasterCard <input type="checkbox"/> Visa <input type="checkbox"/> Eurocard <input type="checkbox"/> Access <input type="checkbox"/></p> <p>Account Number <input type="text"/> Expiration Date <input type="text"/></p>	<p>Statement of Authorization I hereby authorize MCI to bill all long distance calling charges to my current credit card as designated on this application if it is approved. I understand that every call made with the MCI Card is subject to approval by MCI in the U.S. before being completed. I understand and agree that any calling charges billed to my MasterCard, Visa, Eurocard, or Access account will be subject to the same finance charges that may be applicable to other charges that appear on that account in accordance with the terms and conditions governing that account. If my Visa, MasterCard, Eurocard, or Access card is lost, stolen, terminated, or expires for any reason, or if I wish to terminate this authorization to bill my Visa, MasterCard, Eurocard, or Access account for any reason, I will promptly notify MCI and Visa, MasterCard, Eurocard or Access.</p> <p>Signature <input type="text"/></p> <p>Print Full Name <input type="text"/></p> <p>Date <input type="text"/> Social Security Number <input type="text"/></p> <p>For MCI Use Only: Date <input type="text"/> App Code <input type="text"/> Name <input type="text"/></p> <p><small>MCI, its logo, and all other MCI products and services mentioned herein, are trademarks of MCI Communications Corporation.</small></p>
---	---

the attention then it comes that food is a automobile for sing to eat, in

**TELE**

**Competition in**

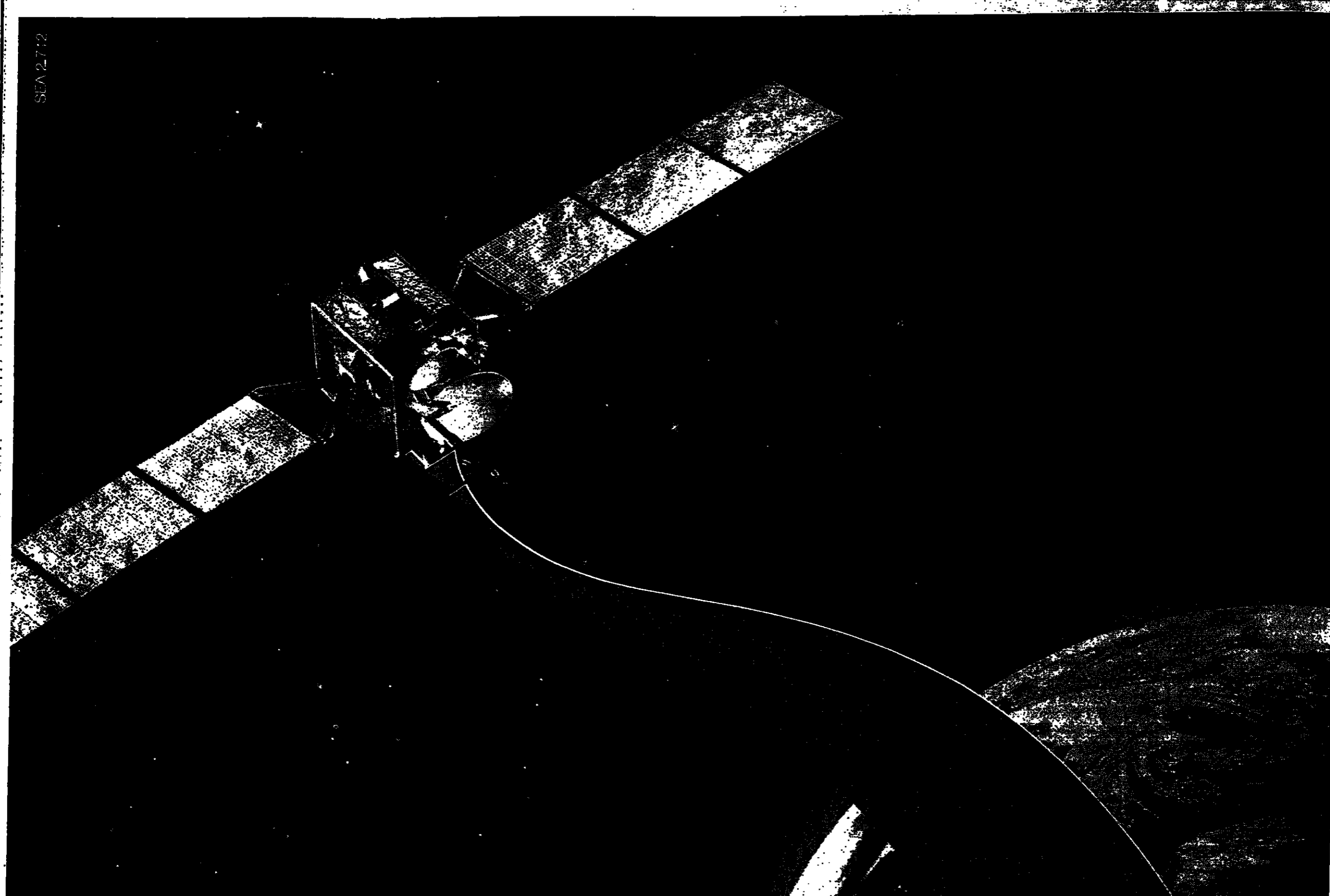
... is being on ... of compo- ... U.S. telecom- ... through a ... of ...

**Products**

All exhibitors are ... to present the ... telecommuni- ... equipment at Asia- ... in Singapore

The International ... of Europe, ... and the ... network ...

... are ...



The best connections for successful international business relationships: Europe's biggest communications company.

Located right at the heart of Europe, Deutsche Telekom offers its customers a unique geographical advantage.

As well as a range of services that covers virtually every requirement: from standard, off-the-shelf networks to custom-designed communications systems, such as in-house corporate networks.

We're on hand in all the world's major markets, waiting to offer you one-source, total solutions for your individual telecommunications needs, and this naturally includes coordinating the activities of all the different companies involved in any

given project. In addition, Deutsche Telekom is a member of the world's four most important satellite organisations, so you also enjoy all the benefits of our in-depth satellite communications know-how.

If you too have important communications challenges to tackle, have a word with us and take full advantage of our business contacts in the very highest places. To find out more, just get in touch with us: we're always at your service!

Telecommunications made in Germany.



We tie markets together



- Koblenz International Key Account Management**  
Tel.: +49 261 1 23 11  
Fax: +49 261 3 82 82
- New York, NY**  
Tel.: +1 212 424-29 00  
Fax: +1 212 424-29 89
- Chicago, IL**  
Tel.: +1 312 214-32 14  
Fax: +1 312 214-32 15
- San Francisco, CA**  
Tel.: +1 415 955-05 12  
Fax: +1 415 955-05 13
- Tokyo**  
Tel.: +81 3 5213-86 11  
Fax: +81 3 5213-86 32
- London**  
Tel.: +44 71 287 17 11  
Fax: +44 71 287 30 99
- Paris**  
Tel.: +33 1 4070-00 00  
Fax: +33 1 4070-16 51
- Brussels**  
Tel.: +32 2 775-05 11  
Fax: +32 2 775-05 99
- Moscow**  
Tel.: +7 095 236 03 34  
Fax: +7 095 237 66 14

**EURO DATA**

... and pricing it correctly?

... and Tariff Consultancy

... the world's behind our name

... information pack ... London W1W 0UB ...

1520

ADVERTISING SECTION

ADVERTISING SECTION

# TELECOMMUNICATIONS

## Competition in U.S.: The Second Act

The curtain is rising on the second act of competition in the U.S. telecommunications market.

During the past decade, long-distance telecommunications saw a dramatic increase in competition after the break-up of the

Many new services are still too costly

AT&T monopoly. Rivals such as MCI Communications Corp. and Sprint have taken more than a third of AT&T's long-distance market.

Now, the next act is beginning, and the setting is the local-exchange market. The level of competition promises to be more dramatic than ever before: a broad spectrum of new rivals and technologies are vying to take a share of local-exchange business from regional monopolies.

"The question of local competition has become a real question rather than a hypothetical one," says Ted Schell, senior vice president for strategic planning and corporate development for Sprint. "The chess game has just begun," he adds.

"Wireless telecommunications technology will have more impact than any other technology on the amount of choice available in local exchanges of the future. The big wedge prying open the Pandora's box of competition is wireless communication," comments Tom Valovic, editor of Telecommunications magazine.

The wireless market is set for a revolution of its own with the advent of personal communication sys-

tems (PCS). The next step beyond today's cellular systems, PCS will enable more people to use wireless communications — at lower cost — in part through a greater saturation of wireless transmission stations. PCS users will be able to bypass the local exchange.

Another new competitor on the scene is the cable-television industry. Some 60 percent of American households today are wired for cable, and as the carriers of voice, data and video merge, cable companies are poised to offer an alternative telecommunications conduit for U.S. homes and businesses.

While most cable companies today are capable only of one-way video transmission, a number of cable operators are investing in a multimedia future. Telecommunications Inc. of Denver, for example, is spending some \$1.9 billion to outfit homes in more than 250 cities with fiber optics capable of carrying voice, video and data communications.

Cable companies also are forging links with another kind of new player — the competitive access provider (CAP). CAPs such as Teleport Communications Inc. of New York and MFS Telecom Inc. of Oakbrook Terrace, Ill., are winning local-exchange contracts for businesses and other volume users.

CAPs already operate private fiber-optic networks in major U.S. cities. Thus, a CAP user in New York can call another in Los Angeles and bypass New York Telephone and Pacific Bell. Cable companies and

others are increasingly buying into different media: TCI and other cable operators, for example, recently bought Teleport.

Meanwhile, local-exchange operators are pushing for an easing of cross-ownership regulations and for permission to buy cable operators. Other technologies also are providing choice for volume users. VSAT satellite dishes, microwave antennas, and the installation of privately owned fiber optics in office buildings are helping businesses bypass local-exchange monopolies.

Industry observers say it is difficult to forecast what role each technology will play in the future. But it is likely that the local-exchange market will be carved up by a combination of regional telephone companies, wireless communications, cable companies, CAPs and other technologies.

While businesses and other volume users are already enjoying the benefits of competition, the average consumer continues to wait for real alternatives. CAPs and other alternatives are currently affordable only to volume users such as Fortune 1000 companies.

But others are looking forward to more competition in local-exchange. "We've all benefited from more choice in long-distance service," says Robert Hamilton, corporate chairman of the board of the Telecommunications Association, a California-based group of telecommunications users. "But there's no real competition among local net-

works, and we'd like to see it coming."

Whereas long-distance rates in the United States have dropped an average of 61 percent since 1980, local telephone rates have risen 315 percent, according to Telecommunications magazine.

This is partly because long-distance charges subsidized local exchanges prior to the AT&T breakup. Nonetheless, a phone call within the New York City area can cost more than a call from New York to California, some 3,000 miles away.

More competition in local exchanges will lead to a further drop in long-distance prices, according to Robert J. Rich, director of public network equipment and

Local phone rates have been rising

services for Dataquest Inc., telecom consultants. Mr. Rich notes that local exchange accounts for about half of the cost of long-distance service.

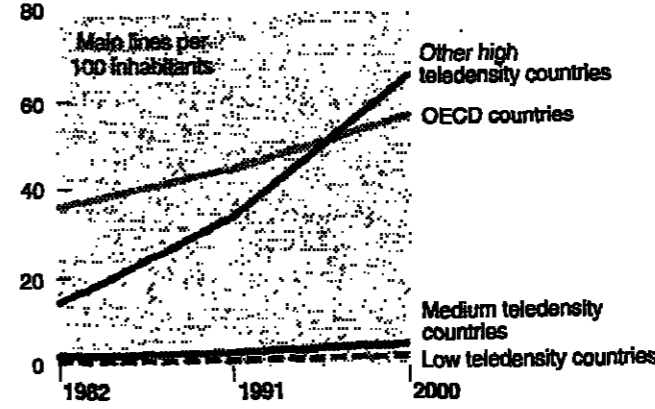
"Increasing competition concerns U.S. local-exchange companies, which are at a disadvantage compared with new competitors, according to John Sodolski, president of United States Telephone Association, a Washington, D.C.-based group of 1,150 local-exchange carriers.

Only local-exchange carriers are required to provide service to the entire community, Mr. Sodolski notes. Also, local exchanges are subject to more government regulation and have longer depreciation terms.

Erich E. Toll

## CONVERGENCE OR DIVERGENCE?

The experience of Asia-Pacific's dragons is not representative of the region as a whole. The gap between the poorest and richest countries in the region, in terms of telecom development, seems to be widening rather than narrowing, leaving many opportunities for the industry to help to close this gap in the future.



Note: Projections based on continuation of recent growth rates.

## Asia/Pacific Now in the Vanguard

Continued from Page 11

since April 1990, the Asia-Sat 1 craft, launched from China for the Hong Kong-based AsiaSat organization, has relayed telecommunications messages, as well as television signals, for more than half a dozen nations in the region.

In mobile telephony, parts of the Far East rival anywhere in the world. With more than 230,000 mobile phone subscribers among its 6 million population, Hong Kong has more mobile phone users than anywhere except northern Scandinavia; it also scores the highest density of pager users anywhere in the world.

The territory is also a leader in the use of a form of mobile telephony known as CT2, the second generation of cordless telephones. This technology permits subscribers with a handset to make calls to anywhere in the world, as long as they are within about 200 meters (218.7 yards) of a "base station." Subscribers cannot receive calls on CT2 handsets. But they pay far less to operate CT2 phones than for conventional mobile phones.

The CT2 revolution was launched in Britain in the late 1980s, but failed to catch on there for a number

of technical and regulatory reasons. Within the past year, however, East Asia has seen several successful launches of CT2 systems.

Singapore started the trend when it officially introduced the technology in January 1992. Thailand followed the next month, launching a service in and around Bangkok, and Hong Kong's consumers had their first opportunity to make outdoor cordless calls in late March. Malaysia's capital, Kuala Lumpur, and China's Special Economic Zone, Shenzhen, adjacent to Hong Kong, have also started service.

Within a few years, analysts forecast, users will be able to use the same cordless handset to make calls in dozens of Asian cities. "It's going to be like basic paging — the simplest and least expensive form of wireless telecommunication," says Bob Growney, senior vice president and general manager of the Paging and Telepoint Systems Group at the U.S. company Motorola, a major manufacturer of the new cordless handsets.

Part of the reason for such success is Asian authorities' new liberal attitude toward phone regulation. Hong Kong, for

example, has franchised four CT2 carriers.

Even more traditionally minded governments are in on the act. Last December, for example, the Malaysian government permitted Binarang Sdn Bhd, which holds the national satellite franchise, to set up the country's third cellular network. The Indonesian government has decided to allow competition in a mobile phone market previously controlled by state monopoly PT Telekom. The Singapore government has announced plans to introduce competition in the mobile network services market, perhaps within five years.

Fearful of losing revenues in their own markets, some of the local PTTs are linking up with multinational firms to offer phone services elsewhere. Singapore Telecom International, for instance, has joined up with a British firm to set up a fiber-optic cable network near London, and with U.S. firm Ameritech International to establish Norway's second digital mobile phone network. Hong Kong Telecom is fortifying its links with China.

Telstra Corporation (formerly the Australian and Overseas Telecommunications Corp.), the biggest integrated domestic/international carrier in the region,

is developing major networks in Vietnam, Cambodia, Laos and the Central Asian republic of Kazakhstan, and already operates businesses in Hong Kong, Thailand and the Philippines.

China, with 12.5 phones per 1,000 people, as opposed to 570 per 1,000 in Hong Kong, represents the jewel in the world's telecommunications crown. The country is already spending \$800 million on a national "backbone" fiber-optic network that will permit it to leapfrog right into the 21st century. Major multinationals, such as Alcatel, Siemens and NEC, which dominated China's phone services in the past decade, now face tough competition.

"With many Chinese officials still jamming the country's inadequate supply of train and plane seats for meetings that cannot be conducted across inefficient phone networks, and economic growth of more than 10 percent fueling new demand for phone lines faster than they can be supplied," says Paul Woodward, managing director of the consulting firm Asian Strategies, "the Chinese market seems set to provide dramatic opportunities for years to come."

Peter Gwynne

## New Products and Services on Display

Over 350 exhibitors are expected to present the very latest in telecommunications equipment at Asia-Telecom '93 in Singapore.

• **Telabs International** will unveil two new products — the ExpressPoint delivery system and the Vantage Point network management system. ExpressPoint is capable of transmitting a full T1 signal (1.544 megabytes of information) over copper cable wire pairs, an innovation that allows operators to increase their transmission capacity from one channel (telephone call) to 24 channels in order to support services such as video and broadcast conferencing, video surveillance and

voice and data conferencing.

The PC-based Vantage Point network management system can be used for traffic routing, the setting up of voice, data and video conferences, and for private network configurations on digital cross-connect based networks. Peter Gagliardi, Telabs president, says, "Telabs is focused on providing a full range of managed products, enabling telecommunications operators to meet the growing global demand for high-quality, flexible digital transmission services, such as virtual private networks, within the public network."

• **Satelink Ltd.**, a subsidiary of Leatham Electron-

ics, will stage the world premiere of the Digital Demand Assignment Multiple Access (DAMA) satellite system, designed and manufactured in New Zealand. Unique in its ability to interface with a wide variety of equipment (including satellite modems and RF transceivers), the system allows customers to configure to their individual requirements and interface with existing equipment. Satelink's DAMA is available as a "stand alone" system or as an integrated package.

• One of the products on display at the GN Elmi stands will be the new GSM A-bis Miter EGM 35, a hand-held, battery-powered diagnostic instrument for GSM mobile telephone services, which are currently being established throughout Europe.

Manufactured in Denmark, the EGM 35 is designed specifically for GSM, which means that a wide range of dedicated test facilities are packed into a single compact instrument. The small size and independence of the power pack means that it can be used anywhere in the network, no matter how isolated the location. Data is presented on a built-in LCD monitor and can be transferred to a printer or external computer for long-term measurements, allowing for remote-controlled operation. Among the operations that EGM 35 can monitor are signaling and transmission, installation testing, performance and load checking, fault tracing and message sequence checking. "Customers for mobile-telephone services all over Europe have a choice of operators," says GN Elmi's managing director, Ernst J. Hede. "Network quality will, more than ever before, be a vital competitive parameter" in the future, he believes.

• **Phillips Network Systems** is scheduled to introduce a new ISDN videophone. The highly compact unit goes away with three separate, relatively bulky units, replacing them with a telephone and integrated codec unit with LCD screen. Also on display will be two new members of the company's MDL millimetric radio family — the MDL 13 and MDL 15. These low-capacity digital radio systems are especially suitable for mobile radio infrastructure, cable back-up, specialized links, remote area and subscriber access connection, videoconferencing and video surveillance. The for-

ward error correction code allows a high level of link quality even in adverse transmission conditions.

Philips Business Communication will introduce a cordless application called SOPHO S15/25/35 that can be used with a range of digital business communications systems. The facility will offer all the benefits of an executive deluxe terminal, with the advantages of cordlessness. Features include hands-free speech, on-hook dialing, rapid call set-up and display messages. Philips Business Communications will also be making a joint presentation with Philips Network Systems on Cordless Loop Applications based on DECT (Digital European Cordless Telecommunications standard).

• The NEC exhibit will cover all levels of communications, centering around its new computer network system, the Customized Network Platform. CNP is a step toward the next generation of information communications networks, supplying customized applications for integrated solutions rather than just providing the components — switching, transmission, radio, network operations and maintenance, computer and terminal equipment. The basic concept is to establish communications networks that meet the demands of customers (customized networking) using a standardized product line-up (platform).

The system includes an entire line of products encompassing the many types of equipment required in network layers, ensuring that all systems operate together to process the huge volume of voice, data and images required in a sophisticated telecommunications network.

• **Varian Microwave Equipment** will inaugurate its new GEN III Klystron High Power Amplifier for satellite uplink earth stations. The product is the latest in a long line of Varian amplifiers and is available in C, Ku and DBS (Direct Broadcast Satellite) uplink brands. Gen III's standard microprocessor controller makes operation easier than with previous models, and its modern design employs a minimum of working parts for reliability and easy maintenance. It can accommodate worldwide power sources without a separate line adapter transformer, using three phase AC voltage.

J.R.Y.

## Building the Electronic Superhighway

"The electronic superhighway" is more than the latest buzzword in telecommunications; it represents the future of integrated services, in which digital broadband fiber-optic networks will be together with voice conversations, data, video images and teleconferencing in one machine.

The question that is causing contention among U.S. companies is, "Which More complex data sent by home PCs

machine will be the "black box" that carries the information to the computer — the telephone or the cable television box?" The debate has widespread implications.

In the United States, President Bill Clinton has raised the stakes in the debate by proposing huge capital-investment, tax credits and government spending to rebuild the U.S. telecommunications system, literally from the ground up. Apple Computer Chairman John Sculley, a close Clinton advisor, and Vice President Al Gore have been the impetus behind the telecommunications initiative, which is expected to cost upward of \$30 billion. Mr. Clinton has already announced that \$17 billion will be spent on several commercial technology programs over the next four years. The U.S. Department of Commerce's National Telecommunications Information and Administration division will be responsible for determining how most of the money will be spent.

All of this will be made possible by fiber-optic cable, which can carry a much higher number of signals simultaneously than metal wires can. As its technological potential is being refined, fiber-optic cable is simultaneously dropping in price — by 10 percent in 1992 alone.

The regional Bell telephone companies (RBOCs), competing long-distance carriers and cable operators have all been busy announcing several projects intended to pave the electronic highway — only each industry proposes using their own systems as transportation. The

RBOCs recently told Mr. Gore that they intend to spend \$125 billion by 2000 and \$450 billion by 2015 to build advanced communications networks — but only if they can own the cable television systems and provide the long-distance service within their carriage areas.

The RBOCs are currently facing increased competition for big-business customers from private-line services. At the same time as those customers' telecommunications needs are increasing, the RBOCs are having to provide faster phone service and more and more local lines. The result has been pressure on the bottom line and a desire to integrate their lines with cable TV lines.

The cable companies have been especially active lately. The two largest, TCI and Time Warner, have both announced ambitious plans to rewire their customers with high-grade fiber-optic lines. The implementation of the 1992 cable regulation bill, however, will undoubtedly cut into cable systems' profits, inhibiting capital spending. But they are forging ahead, hopeful that new services will pay for the upgrades.

On April 12, TCI announced it will spend \$2 billion to rewire its 10 million subscribers. The fiber-optic strands will not only enable TCI to implement 500 cable channels; TCI will also use the upgrade to offer customers phone service, video images, data transmission and retrieval, interactive video, video games, videophones and movies on demand. Time Warner and TCI both announced that they are already teaming up with Sega Entertainment to provide video games to their customers.

mission systems. The digital data systems will enable Continental systems to provide specialized services to businesses, schools, municipalities and hospitals.

Cablevision Systems, which operates the single largest U.S. cable system (in Long Island, New York), has announced plans for what it calls "the nation's largest electronic superhighway." This advanced fiber-optic network, already under construction, will provide personal communication services and medical imaging, among other services, to 800,000 subscribers.

These cable companies have an advantage over the RBOCs because many have been planning fiber-optic rebuilds for several years, and the new lines will enable them to eat into the RBOCs' \$28 billion annual local-access revenue.

A third party has entered the fight to build the electronic superhighway: home computer manufacturers. Recently, Hewlett-Packard and Microsoft announced software that allows Microsoft Mail users to connect directly to Hewlett's high-performance messaging server — the first of several announcements expected over the next year between electronic mail (E-mail) carriers and server software. E-mail, however, represents only the first step by existing networks to utilize modern hookups via telephone lines for the transmission of more sophisticated data than the faxes, word processing, and information and data banks currently in use. Besides, fiber-optic telephone and cable wires may relegate the home computer to the status of a mere information processor, as opposed to an active data transmitter or receiver.

In Europe, privatization and competition have thrown markets wide open. The European Telecommunications Standards Institute (ETSI) has been busy issuing a flurry of regulations governing EC territories. ETSI has even taken the lead in wireless local-loop technology. ETSI will devise official standards — the world's first — governing radio-access technol-

ogies, which will allow the EC to open local voice services to much-needed competition.

Wireless services, which cost much less than wired networks, will allow new companies to break into the local phone business. In February this year, Britain became the first EC country to allow a wireless company to compete with British Telecom. The situation is being watched warily by other EC phone companies.

U.S. companies are already trying to move into the EC market. In addition to AT&T's efforts to enter the British market, BellSouth Corp. recently purchased a large share of France Telecom's new mobile data unit. With mobile data networks already in place in the Netherlands and Britain, the RBOC thus has a chance of becoming the first company to offer a pan-European mobile data service.

Despite laws that now allow open competition for providing basic data transmission within the EC, however, private companies are complaining that existing regulations favor state monopolies. Among such rules are so-called data network identification codes, which allow routing of data; the current system favors only the largest companies.

The EC is struggling to balance private phone concerns with national telecommunications services like British Telecom and Deutsche Telekom. Member states have forced the EC to drop proposals to open cross-border voice services to competition by 1996. But the EC's plan to allow cable TV operators to sell cross-border telecommunications services starting Jan. 1, 1994 may well succeed, thanks to Britain, the Netherlands and France, which favor inter-media competition.

Europe is not only facing questions about competition among its own and foreign telecommunications companies, but will also soon face the same question as the U.S.: Who will build the continent's electronic superhighway?

Steve Weinstein

Are you reading the market and pricing it correctly?

**EURODATA**  
FOUNDATION

founded in 1976

Telecoms and Tariff Consultancy

The world's behind our name

Apply today for free information pack.  
Empire House, 175 Piccadilly, London W1V 9DB  
Tel: +44 71 629 0774 Fax: +44 71 583 0516

WORLD STOCKS IN REVIEW

Amsterdam

Supported by lower interest rates, shares initially spurred higher in Amsterdam last week, although toward the weekend the market weakened.

The CBS all-share index gained a slim 0.6 points on the week, to 2183.3 points. Even good first quarter results from Royal Dutch/Shell were not able to lift the late-week selling pressure. The oil group raised first-quarter net profit to 3.11 guilders per share from 3.00 a year earlier. The stock gained almost 5 percent to close at 153.70 guilders.

Frankfurt

Hopes for lower German interest rates pushed stock prices up last week, but the market started back down on Friday after statements by the Bundesbank chief, Helmut Schlesinger, that the market would be raising out a rate cut now.

The DAX index ended the week at 1,634.51 points, up 1.45 percent on the previous Friday. But the indicator had

gained almost 2 percent for the Tuesday-Thursday period.

Analysts said the Frankfurt market remained under the influence of poor German economic data, and the stock price recovery caused by hopes for lower interest rates was strictly temporary.

Hong Kong

Blue chips grabbed the spotlight as optimism returned to the jumpy market, sending the Hang Seng Index up 206.95 points, or 3 percent, to end a record-setting week at 7,005.29.

Daily volume averaged 5.22 billion dollars, up from the previous week's 4.36 billion dollars.

The week began with attention focused on second-line stocks that have zoomed in value in recent weeks as acquisition targets for Chinese state companies seeking a "back-door" listing on the exchange. Such issues are not among the 33 that make up the blue-chip Hang Seng Index, which fell 59.11 points on Monday. But the mood changed Tuesday when a Chinese-British body announced a land disposal

program for the current fiscal year, suggesting an easing in relations.

The index jumped 102.74 on Tuesday, then punched through the 7,000 mark for the first time on Wednesday.

Milan

Milan shares edged lower on technical factors related to the end of the account.

The MIB index fell 11 points, or 0.92 percent, to 1,189. From the start of the year, the market is up 18.9 percent.

A vote of confidence in the government of Carlo Azeglio Ciampi and hopes for an early cut in interest rates underpinned the market and should provide the basis for a resumption of the upward trend this week, brokers said.

Paris

The Bourse fell 1.5 percent last week after swallowing the bitter pill of the new government's austere economic program aimed at cutting the budget deficit. An easing in interest rates failed to in-

spire the market, which has now lost 10 percent from its 1993 peak.

The CAC 40 index finished down nearly 27 points on the week at 1,851.74 points. That is just above a key resistance point that brokers fear could be breached this week as concern about the grip recession is getting on the economy grows.

Singapore

The Stock Exchange of Singapore set a string of records last week as the key market indicator, the Straits Times Industrial Index, surged past the 1,800 mark for the first time.

Over the five trading days the industrial index gained a hefty 88.57 points, an increase of nearly five percent, to 1,863.39. But some brokers forecast a technical correction after the weekend.

Volume was up 69 percent over the previous week at 1.4 billion shares.

corporate earnings reports were likely to show poor results in the year to March.

The Nikkei Stock Average of 225 selected issues in the major first section fell 337.21 points, or 1.6 percent, this week to 20,474.15 points.

First-section volume averaged 589 million shares, down from 605 million shares traded the previous week.

After opening at 20,682.46 points, the key indicator reached the 21,000 point level on Monday for the first time since March 1992. Brokers said the index was supported by buying from public funds.

Zurich

Zurich shares, in a consolidation phase for the last month, broke out of their trading range with a sharp rise last week. The Swiss Performance Index gained 17.73 points to 1,263.26.

But the trend was not uniformly up with brokers noting falls after disappointing U.S. inflation figures and the decision of the Bundesbank not to cut German interest rates. A new bout of consolidation is now expected.

SHORT COVER

Shanghai to Reopen a Finance Hub

BEIJING (AFP) — Shanghai plans to return some of the buildings on its famed waterfront, the Bund, to foreign banks that occupied them before the 1949 Communist takeover, the China Daily Business Weekly reported Sunday.

The eastern Chinese metropolis was a world financial center before 1949, and the Bund, which had more than 240 banks in the 1930s and 1940s, was the heart of its banking district.

The city government is "urgently trying to turn some pre-1949 office buildings back into banks," the paper said. Since 1988, only five buildings have been refurbished into banks. But China's plans to rebuild Shanghai into a world financial and trade hub by the end of the century have attracted a host of foreign financial institutions.

Bogotá Sets \$5 Billion Oil Investment

BUCAMARANGA, Colombia (AFP) — Colombia will invest \$5 billion over the next four years to bolster oil production, the president of the state oil company, Ecopetrol, has said.

Juan María Rendón said at the new Colombian Petroleum Institute on Friday that the money would be spent to update the country's oil exploration and pumping equipment.

Mr. Rendón said that the country would probably produce 900,000 barrels daily this year, and that the figure would grow considerably when wells were sunk in newly discovered oil fields. He said British Petroleum PLC was seeking permission to drill the wells. BP, in cooperation with Ecopetrol and other oil companies, recently discovered fields in south-eastern Colombia.

NASDAQ NATIONAL MARKET

OTC Consolidated trading for week ended Friday, May 14.

Table with columns: Sales, High, Low, Close, Net Change. Lists various OTC stocks and their performance.

Table with columns: Sales, High, Low, Close, Net Change. Lists various NASDAQ stocks and their performance.

Table with columns: Sales, High, Low, Close, Net Change. Lists various NASDAQ stocks and their performance.

Table with columns: Sales, High, Low, Close, Net Change. Lists various NASDAQ stocks and their performance.

Table with columns: Sales, High, Low, Close, Net Change. Lists various NASDAQ stocks and their performance.

(Continued on next page)

Advertisement for 'PORT' featuring 'Edge Do' and 'Complete 3-'. Includes a 'Blue' logo and 'NASDAQ NATIONAL MARKET' text.



MONDAY SPORTS ICE HOCKEY

Astros Edge Dodgers, 3-2, To Complete 3-Game Sweep

HOUSTON — Doug Drabek broke a seventh-inning tie with his second career home run as the Houston Astros beat the Los Angeles Dodgers 3-2 Sunday and earned a three-game sweep. Drabek, who also hit a run-scoring single in the fifth, lined a 3-2 pitch from Pedro Martinez to left to break a 2-2 tie. Drabek's only previous home run was on April 24, 1990, off San Francisco's Scott Garza.

Jose Vizcaino of the Cubs went 0 for 4, ending his 16-game hitting streak, the longest in the majors this season. Derrick May drove in all three runs for Chicago. He had four RBIs on Saturday.

NL ROUNDUP

McClendon's walk, Kevin Young's single and Tom Prince's bunt single. Tom Foley hit a sacrifice fly off Bob Scanlan, and Orlando Merced singled home the tying run. The throw home by right fielder Sammy Sosa bounced for an error that allowed the go-ahead run to score. Lonnie Smith hit an RBI single later in the inning.

Cardinals 1, Marlins 0: Fincher Todd Ziegler singled with the bases loaded in the ninth inning Sunday as the St. Louis Cardinals ended a string of 17 consecutive scoreless innings. With one out in the ninth, Greg Jefferies singled for his second hit of the game, stole second and went to third on catcher Steve Decker's wild throw. Ray Lankford and Mark Whiten went intentionally walked to load the bases. Ziegler, batting for Stan Royer, singled to center through a drawn-in walk.

playing at home, rallied to beat Colorado for its sixth straight win. Mitchell singled off Armando Reynoso to lift the Reds to 5-0, at 18-18, for the first time since April 7. Marlins 8, Cardinals 0: Ryan Bowen pitched his expansion team's first shutout as Florida won in St. Louis. Giants 3, Padres 0: In San Diego, Trevor Wilson ended a two-season, six-game losing streak with the support of home runs by Barry Bonds and Robby Thompson as San Francisco won in San Diego. Expos 2, Mets 1: Frank Bolick scored the tying run on Darrin Fletcher's squeeze bunt in the fifth inning and hit a sacrifice fly in the sixth as Montreal, playing at home, won for the fourth time in five games. New York has lost 15 of 19. Astros 7, Dodgers 1: Andujar Cedeno had three hits and drove in three runs as Houston won its eighth straight over visiting Los Angeles. Cubs 14, Pirates 5: Chicago hit four home runs and had 19 hits in beating visiting Pittsburgh. Derrick May had a three-run home run, Sammy Sosa hit a two-run homer and Dwight Smith and Ryne Sandberg had solo shots.



Linesman Sweede Knox got some rough treatment as he tried to separate the Maple Leafs and Blues. Six unanswered goals put the Maple Leafs in the semifinals.

Canadiens Bring Islanders to Earth

Compiled by Our Staff From Dispatches MONTREAL — The momentum they got by ousting defending champion Pittsburgh from the Stanley Cup playoffs didn't help the New York Islanders, who lost the first game of their Wales Conference final 4-1 Sunday to the torrid Montreal Canadiens.

John LeClair scored his first two goals of the postseason as Montreal tied a club record with its ninth straight playoff victory. The Canadiens haven't lost since dropping the first two opening-round games to Quebec, whom they ousted 4-2 before sweeping Buffalo in the Adams Division final. The Islanders, playing on only 38 hours of rest after their 4-3 overtime Game 7 victory over the Penguins in the Patrick Division final, came out flat. They were overpowered by the Canadiens, who had a week to rest. Game 2 of the best-of-7 series is Tuesday night at the Forum.

The Canadiens' ninth consecutive playoff victory matched the record they set in 1978.

STANLEY CUP

utes remaining. But Pittsburgh tied the game and sent it into an extra session on a goal by Rick Tocchet with a minute left and Barrasso out of the net for an extra attacker. In Saturday's game: Maple Leafs 6, Blues 0: Wende Clark scored two goals in a four-goal first period in Toronto that advanced the Maple Leafs to the semifinals of the Stanley Cup playoffs for the first time since 1978. With their seven-game victory over St. Louis in the Norris Division final, the Maple Leafs gained the Campbell Conference final against the Los Angeles Kings, which starts Monday night in Toronto. The Kings have been waiting to play the winner of the Norris series since finishing off Vancouver in six games. The Maple Leafs have won 13 Cups in their franchise history, but none since 1967. In their previous semifinal 15 seasons ago, the Maple Leafs were beaten in four straight by the Montreal Canadiens. Dave Andreychuk and Mike Krushelnyski also scored first-period goals to help the Maple Leafs take a 4-0 lead. Kent Manderville and Doug Gilmour added second-period goals as the Maple Leafs took advantage of a sub-par performance by Blues goaltender Curtis Joseph, who had been the sensation of the playoffs. This time, Joseph was outplayed by Toronto rookie goaltender Felix Potvin, who stopped 23 shots. Gilmour accumulated three points to improve his total to 22. That eclipsed the previous high of 21 by Darryl Sittler in 1977. "It was a great series," said Clark, the Maple Leafs' captain. "It came down the seventh game. One team's always got to win." (AP, NYT)

Blue Jays Hammer 5 Home Runs to Top Yankees, 12-6

The Red Sox, who scored only 18 runs and batted 238 while losing five of their first eight games on this road trip, battered six Minnesota pitchers for 17 hits to cap the trip.

The Twins' three-game winning streak was snapped even though Brian Harper tied a career high with four RBIs, including three with a first-inning single when Dave Winfield scored all the way from first.

Orioles 3, Tigers 2: Mike Mussina tied a club record with 14 strikeouts in eight innings as Baltimore beat hard-hitting Detroit.

AL ROUNDUP

Detroit, which has won five of its last seven games, entered the day batting .292, averaging 6.9 runs and 10 hits. Mussina tied the team record for strikeouts in a game set by Bob Turley in 1954 against Cleveland and Connie John-

son against the New York Yankees in 1957. Mussina struck out every Tiger starter at least once, and fanned Chad Kreuter three times. Gregg Olson got the last three outs for his seventh save. Brewers 5, Indians 3: John Jaha's two-run single capped a four-run first as the Milwaukee Brewers, playing at home, beat Cleveland, giving right-hander Jaime Navarro his first victory of the season. The Indians loaded the bases in the ninth. Thomas Howard led off with a single off Graeme Lloyd. Lloyd was relieved by Doug Henry, who loaded the bases on a single to Treadway and walked Reggie Jefferson before getting the final three outs for his ninth save. Angels 5, Royals 3: In Anaheim, California, J.T. Snow's three-run homer capped a four-run third inning as California held on to beat Kansas City. Tigers 5, Orioles 3: Alan Trammell hit a go-ahead single with two outs in the eighth as Detroit, playing at home, ex-

three in the first for the second straight game. But the Brewers, who scored three in the first Saturday, came back with four off Mike Bielecki in bottom half. In Saturday's game: Twins 7, Red Sox 4: Dave Winfield homered twice and Kent Hrbek had a two-run shot Saturday as the Minnesota Twins used their first three-homer game of the season to beat the Boston Red Sox, 7-4, in Minneapolis. Rangers 6, White Sox 4: Rafael Palmeiro bounced a home run off the top of the center field wall in the 11th inning to give Texas a victory over visiting Chicago. Angels 5, Royals 3: In Anaheim, California, J.T. Snow's three-run homer capped a four-run third inning as California held on to beat Kansas City. Tigers 5, Orioles 3: Alan Trammell hit a go-ahead single with two outs in the eighth as Detroit, playing at home, ex-

NASDAQ NATIONAL MARKET

OTC Consolidated listing for stocks ended Friday, May 14. (Continued)

Table with multiple columns listing OTC stocks, including symbols, prices, and market data for Friday, May 14.

Table with multiple columns listing NASDAQ national market stocks, including symbols, prices, and market data.

Table with multiple columns listing NASDAQ national market stocks, including symbols, prices, and market data.

Table with multiple columns listing NASDAQ national market stocks, including symbols, prices, and market data.

file attention when it comes that food is a automobile for ing to eat, in

MONDAY SPORTS RACING

Prairie Bayou First in Preakness

By Joseph Durso
New York Times Service
BALTIMORE—Prairie Bayou, the onetime klutz of the Loblolly Stable, the underdog known around the barns as Prairie Dog, the beaten favorite in the Kentucky Derby two weeks ago, became king of the racing realm when he won the 118th Preakness Stakes by half a length over Cherokee Run.

finishing second in the three others. He also revived the image of the Loblolly Stable of Arkansas, which approached the Kentucky Derby with three or four leading candidates, only to see most fall by the wayside on the road to Louisville. The survivor was Prairie Bayou, and he won at Pimlico one day after the Loblolly filly Aztec Hill won the Black-Eyed Susan Stakes on the same track, under the same rider, Mike Smith.

immediately pulled up by his rider, Pat Valenzuela, found to have suffered a compound fracture of the right front ankle and was destroyed by infection. As they sailed home, Prairie Bayou had half a length on Cherokee Run, the speed horse who skipped the Derby. Then it was seven long lengths back to El Bajan, the wonder horse from Panama, who beat Personal Hope to the wire by the length of his neck. And three-quarters of a length farther back came Sea Hero.

Pool of the United States finished fifth and Kitwood of France placed sixth among 16 in the field. The Yasuda Memorial and the Japan Cup — of the 16 G-1 races each year sponsored by the Japan Racing Association — are open to foreign horses. The association opened the Yasuda Memorial to foreign participants this year under pressure from abroad. But 10 of the 12 invited declined, many because they had to pay all expenses including the seven million yen (\$64,000) it costs to ship a horse to Japan.

Cuban Boxers Win 8 Golds, 3 Silvers At Championships

TAMPERE, Finland — Super heavyweight Roberto Balado made it look easy Sunday, as did most of the other Cubans at the World Amateur Boxing Championships. Balado decisively outpointed Bulgarian, 10-1, for his third straight gold medal as the championships ended. That gave the Cubans, who have further developed a style that suits the new electronic scoring system, eight gold and three silver medals. See Scoreboard.

Luyendyk Gains Indy 500 Pole Spot Mansell and Piquet Also Qualify, Foyt Abruptly Retires

INDIANAPOLIS—Arie Luyendyk has won the pole position for the Indianapolis 500, with a late run that was somewhat overshadowed by the abrupt and tearful retirement of four-time winner A.J. Foyt. Luyendyk, the Dutchman who won in 1990, knocked 1969 winner Mario Andretti off the pole Saturday after waiting for cooler temperatures in the final hour of the first four days of qualifying.

comprised of Lola-Fox Cosworth cars by averaging 223.379 mph. The fastest of three rookies who qualified was Stefan Johansson of Sweden, at 220.824. Another rookie, Nigel Mansell, the reigning Formula One champion and Andretti's teammate, qualified at 220.255. He then flew home to Florida to recover from the back surgery on April 28 that followed a crash April 3 at Phoenix. "It's a great education, but it's a great one," Mansell said. "For me, that the race is more than a fortnight away is mind-blowing. The longest I've ever had to wait for a race is Monte Carlo, where you have Friday off, finish qualifying Saturday and race on Sunday."

Emerson Fittipaldi, the 1969 winner, was next at 220.150, followed by Guerrero at 219.645; Scott Brayton at 219.637; 1985 winner Danny Sullivan at 219.428; then Indy rookie and three-time Formula One champion Nelson Piquet of Brazil at 217.949.

SCOREBOARD

Table with columns for Major League Standings (AMERICAN LEAGUE, NATIONAL LEAGUE) and Friday's Line Scores.

Table with columns for Saturday's Line Scores, categorized by American League and National League.

Table with columns for Tennis, Baseball, and Hockey.

Table with columns for Baseball, Basketball, and Boxing.

Table with columns for Baseball, Basketball, and Boxing.

Friday's Line Scores

Table with columns for American League and National League.

Saturday's Line Scores

Table with columns for American League and National League.

Japanese Leagues

Table with columns for Central League and Pacific League.

WORLD CUP QUALIFIERS

Table with columns for Asia Zone First Round, Spanish First Division, and French First Division.

BASEBALL

Table with columns for American League and National League.

BOXING

Table with columns for World Amateur Championships.

DENNIS THE MENACE



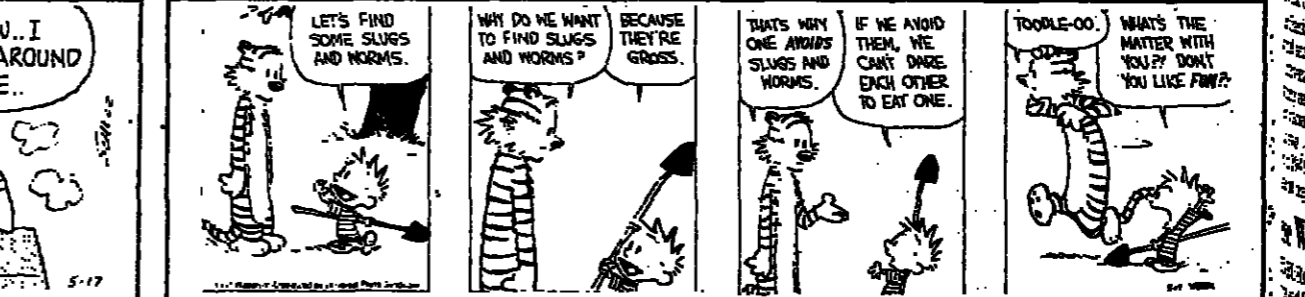
PEANUTS



WELL I SEE YOU'RE BACK FROM YOUR CAMPING TRIP. I HOPE YOU ENJOYED IT AS MUCH AS THE BIRDS... I DON'T KNOW... I HATE CHIRPING AROUND THE CAMPFIRE.



CALVIN AND HOBBS



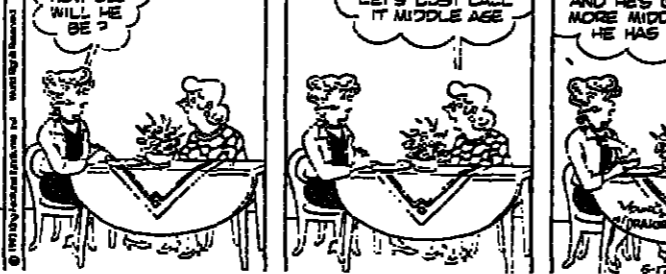
JUMBLE

Table for Jumble word game with words like GANOW, PUBYM, SEATTLE, RANLEY.

BLONDIE



LET'S JUST CALL IT MIDDLE AGE. AND HE'S GOT A LOT MORE MIDDLE THAN HE HAS AGE.



WIZARD OF ID



BEEETLE BAILEY



COOKIE! WHY ARE YOU ON THE ROOF SUCKING?



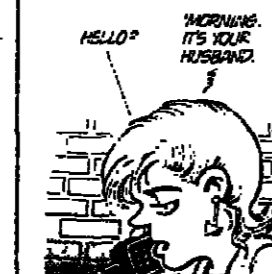
REX MORGAN



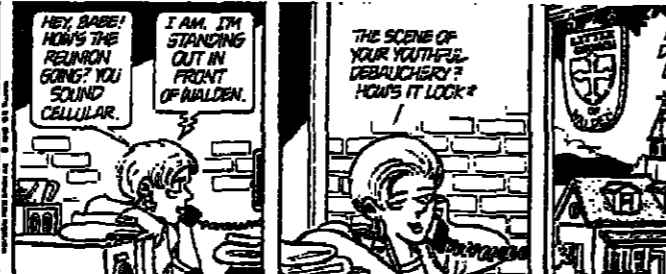
THEY TOLD ME I HAD THE RIGHT TO REMAIN SILENT...



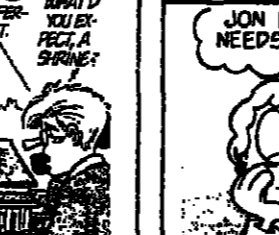
DOONESBURY



HELLO... IT'S YOUR HANDS!



GARFIELD



JON LOOKS LIKE HE NEEDS SOME ATTENTION. PAT PAT. NICE JON... GOOD BOY. Purrurr. AND SOME PROFESSIONAL HELP.



IT'S EASY TO SUBSCRIBE IN SLOVENIA AND CROATIA. Just call Doherty & Co. Szecso. Phone: (067) 733 73. Fax: (067) 312 02.

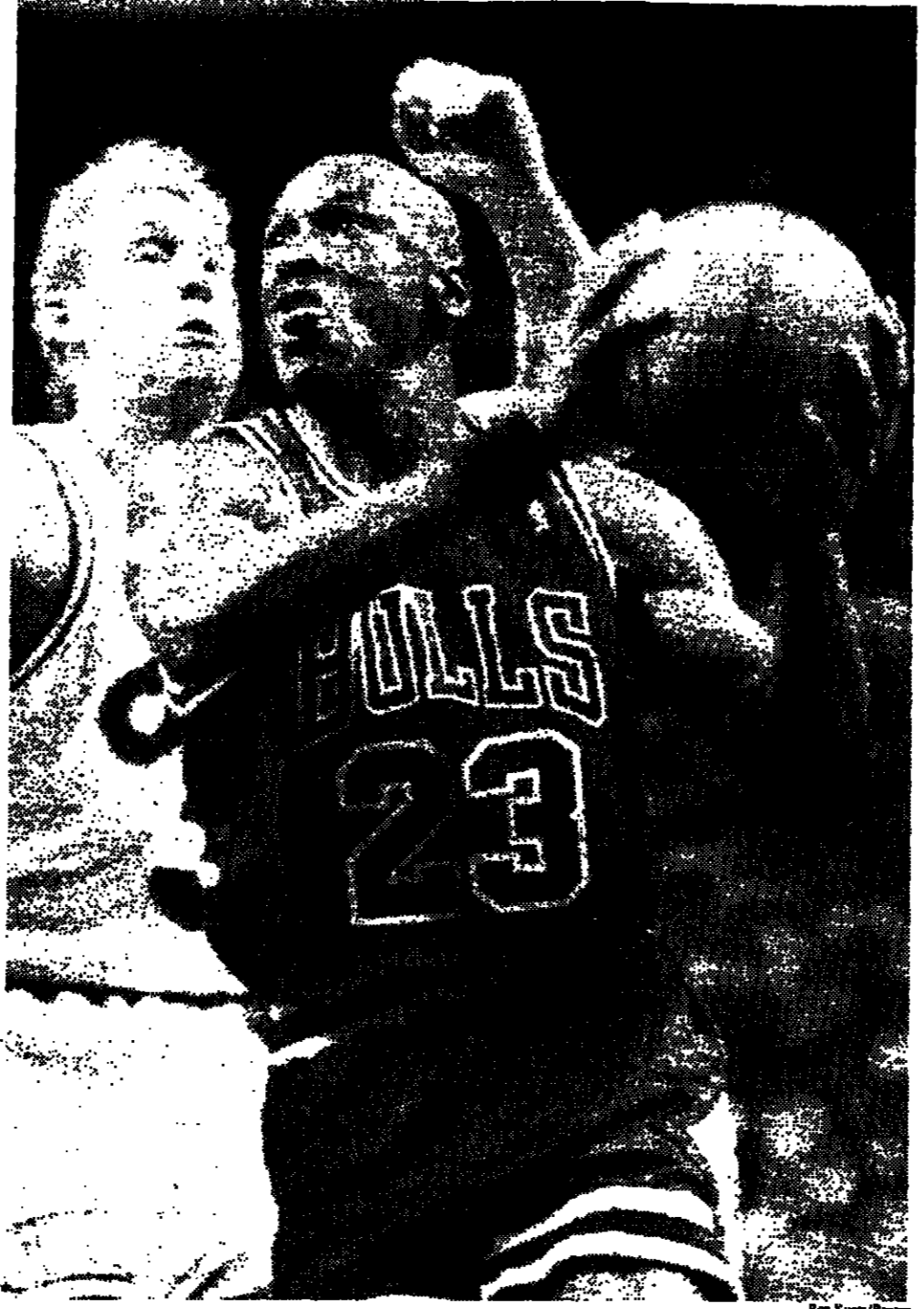
Large advertisement on the right edge of the page for 'N D A PORT', 'Blackman's', and 'Hornets'.

Arabic text in a handwritten box.

MONDAY SPORTS TENNIS

Knicks Get 3-1 Lead As Blackman's Shot Beats Hornets by 2

CHARLOTTE, North Carolina — Rolando Blackman's 20-foot jumper with 5.4 seconds to play Sunday gave the New York Knicks a 94-92 victory over the Charlotte Hornets and a 3-1 lead in their Eastern Conference semifinal series of the National Basketball Association's playoffs.



Michael Jordan, playing with a sprained wrist, found a path to the hoop past Craig Ehlo.

Blackman, struggling with 31 percent shooting in the playoffs, took a pass from a stumbling Hubert Davis and fired in the game-winning shot from the top of the key just before the 24-second clock expired. After Charlotte took a timeout, Kendall Gill got the inbounds pass to Muggsy Bogues, but he lost the ball and Patrick Ewing scooped it up to secure the victory, although the Knicks scored just 14 points in the fourth quarter.

With Jordan testing the limits of his injured wrist, the Bulls fell behind by as many as 13 points in the second quarter before closing to 53-50 at the half.

Spurs 111, Suns 96: Antoine Carr scored a career playoff-high 21 points and Sean Elliott and Dale Ellis shook off their shooting slumps in San Antonio as the Spurs capped the Suns' lead to 2-1 in the best-of-7 Western Conference playoff series.

Courier Routs Ivanisevic To Capture Italian Open



Steffi Graf won a record seventh German Open title in Berlin.

By Ken Shulman New York Times Service ROME — It was the battle that wasn't, an explosive, well-balanced firefight that was smothered before it could ignite.

Playing with total concentration, Jim Courier suppressed hard-serving Goran Ivanisevic on his way to a one-sided 6-1, 6-2, 6-2 victory in the Italian Open final on Sunday.

Every time I play him, it goes so fast," said Ivanisevic, who is now 3-3 lifetime against Courier.

He doesn't like to play left-handers," Ivanisevic said, "and he doesn't like to play me."

SIDELINES

Rominger Again Wins Tour of Spain SANTIAGO DE COMPOSTELA, Spain (AP) — Tony Rominger of Switzerland, known for his quick time trials, on Sunday won his second consecutive Tour of Spain on the strength of ferocious mountain cycling in the final week of the 21-day event.

Rominger finished second in the final stage — a 44.6-kilometer (27.7-mile) time trial that ended in Santiago de Compostela — and 48 seconds behind countryman Alex Zülle.

Chinese Women Win in Table Tennis GOTENBURG, Sweden (Reuters) — Olympic doubles champions Deng Yaping and Qiao Hong helped China regain the women's team title Sunday with a 3-0 victory over North Korea at the World Table Tennis Championships on Sunday.

German Drug User Has No Regrets BERLIN (UPI) — Bona Briesnick, the former East German who won the Olympic shot put title in 1980 and held the world record, admitted Sunday she had long used performance enhancing drugs, but said that "I regret nothing" because Western athletes also used illegal drugs.

Eubank Keeps WBO Championship GLASGOW, Scotland (AP) — Chris Eubank of England retained his WBO super-middleweight title Saturday night with a 12-round draw against Ray Close of Northern Ireland.

Vail Gets 1994 World Cup Ski Finals NEW YORK (AP) — In a surprise move, Vail, Colorado, has been selected to host the 1994 Alpine World Cup ski finals a month after the Winter Olympics.

For the Record A Missa trained to run onto the field after each touchdown ran over longman Richard Ashe of the Arizona Rattlers during an Arena Football League game in Phoenix.

Sweden's Haeggman Wins Spanish Open



Zico of Brazil played like he owned the ball as his Kashima Antlers won, 5-0.

Lanner — who eagled the first — Els and Faldo were the only players to really threaten Haeggman on Sunday.

Lanner picked up three birdies before the turn to join Haeggman on the leaders' board, but two late bogeys ruined his chances.

Scott Simpson survived wind, water, woods and a warning with a scrambling 68 for a one-shot lead over Trevor Dodds, a native of South Africa who now lives in Namibia, going into Sunday's last round of the Byron Nelson Classic in Irving, Texas.

With swirling afternoon winds playing havoc with the leaders, long-hitting Laura Davies of England struggled to a 2-over-par 73 to take a one-shot lead into Sunday's final round of the McDonald's Championship in Wilmington, Delaware.

Brazil's Zico Paces Japan Soccer

Compiled by Our Staff From Dispatches TOKYO — Eight teams in Japan's new professional soccer league made their debut Sunday, with foreigners scoring 10 of the day's 14 goals.

Brazil's Zico, evergreen at 40, got a superb hat-trick as his new team, Kashima Antlers, romped to a 5-0 victory over Gary Lincker's Nagoya Grampus in Kashima's new stadium, which cost 8.2 billion yen (\$73.8 million) and seats 15,000.

Sartori Alcindo of Brazil scored twice, and could have had a hat trick. But in the 84th minute, with only the goalkeeper to beat, he was too casual and Itoh snatched the ball from his feet.

It was Brazilian delight at one end, it was English misery at the other. Lincker had no clear-cut chances and his frustration began to show even though his normal good temper.

INTERNATIONAL CLASSIFIED

Escorts & Guides International Classified. Includes sections for Belle Epoch, Mercedes, London Ambassador, and various international travel services with phone numbers and contact info.

Little attention when it comes hat food is a automobile for jam to eat, in

